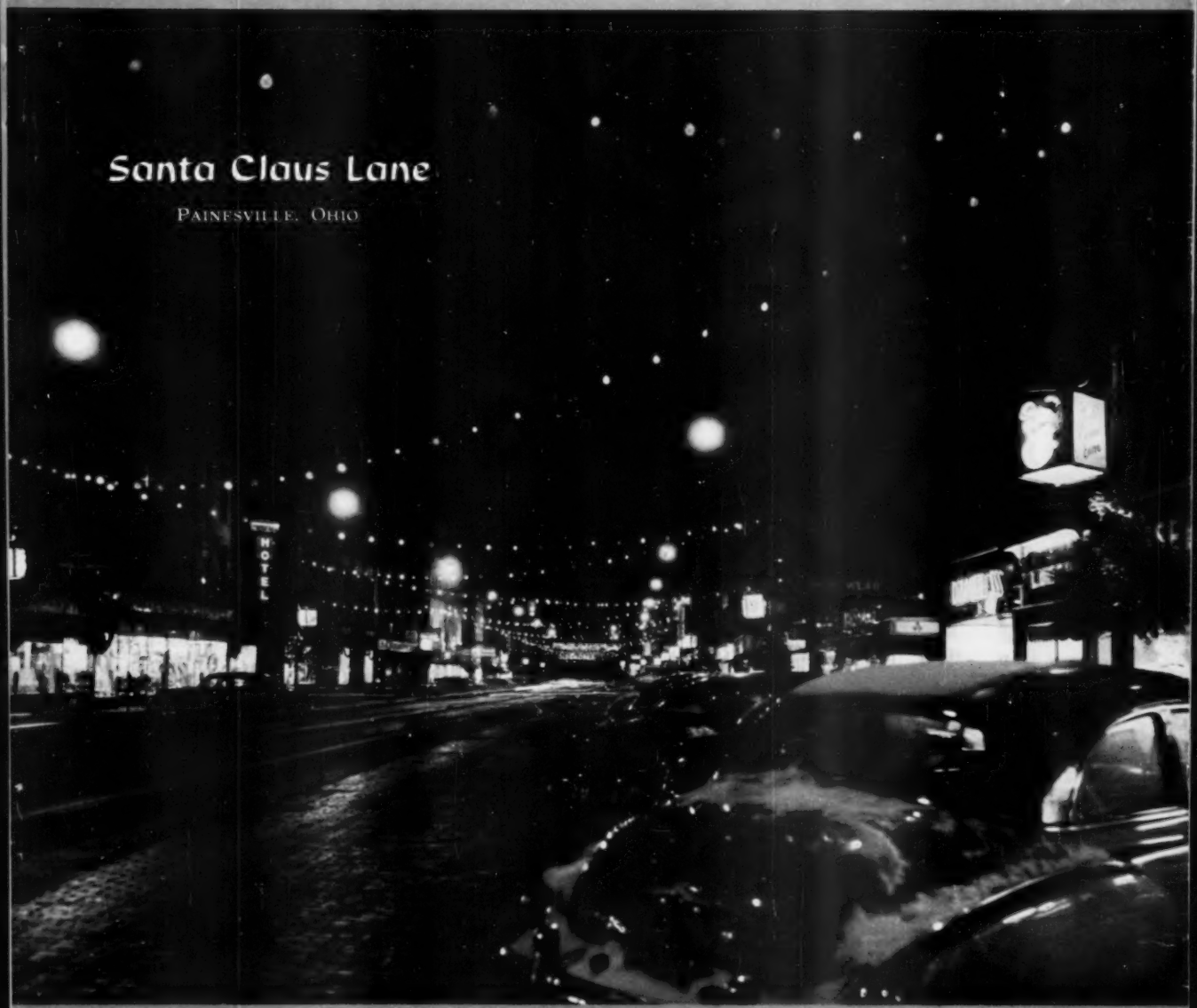
DECEMBER 1956

# The American City




In a period when doubts, fears, and suspicions cast troubled shadows that tend to confuse earnest people throughout the world, let us dedicate ourselves to the unselfish goal exemplified by this holy season.

May our cities, towns, and villages provide the leadership and inspiration that will help spread abroad the divine message given us by all great leaders, regardless of creed—that on earth we should have peace; and among the people of all mankind, good will.

And let this spirit promote friendliness and respect between all men and their neighbors.

HAROLD S. BUTTENHEIM, *Editor Emeritus*, THE AMERICAN CITY

# Proved under 88,000 vehicles a day on the Benjamin Franklin Bridge

**CONTRACTOR**

Texaco Asphalt paving on both bridges was constructed by the Union Paving Company of Philadelphia.

Laying two-course Texaco Asphaltic Concrete pavement on the Walt Whitman Bridge at Philadelphia.

# Texaco Asphaltic Concrete paving serves new Walt Whitman Bridge

The Benjamin Franklin Bridge, which links Philadelphia with Camden, N. J., over the Delaware River, is one of the nation's busiest traffic arteries. It is used daily by more than 88,000 cars and trucks. Serving this traffic day in and day out is a resilient, heavy-duty Texaco Asphaltic Concrete pavement.

To relieve congestion on the Benjamin Franklin Bridge, the Delaware River Port Authority has erected a new span, the Walt Whitman Bridge, connecting Philadelphia with Gloucester, N. J. This, too, has been paved with Texaco Asphaltic Concrete.

The rugged durability and low upkeep cost of Texaco Asphaltic Concrete under heavy bridge traffic strongly recommend this pavement wherever heavy traffic must be served. In particular, it is the ideal type of construction for the Interstate Highway System. One of its chief advantages is that its initial cost, when it is laid on a flexible base, is substantially lower than comparable rigid paving.

Helpful information on methods and materials recommended for high-type Texaco Asphaltic Concrete is supplied in a booklet, "Texaco Asphalt Paving—Plant-mixed Types." Copy may be obtained without obligation by writing our nearest office.

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TEXACO
REG. T. M.

# TEXACO ASPHALT

DECEMBER 1956

The American City

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# Here's One Of Santa's Prize Packages

*Telephones as Christmas Gifts*

If you order early, we'll do our best to install your gift telephones before Christmas. If that isn't possible, then we'll come around after Christmas and install them wherever you wish.

There's a new idea in gifts and it's one of the best in a long, long time. It's the idea of giving telephones for Christmas.

Few things are so sure to be appreciated by everybody. For when you give someone an additional telephone you give three of the greatest gifts of all—comfort, convenience and security. And "it's fun to phone."

So this year, make it something different and "give the gift you'd like to get."

Save steps and work for Mother by giving her an additional telephone for the kitchen or bedroom.

Help Dad avoid puffing up the stairs (they may be getting a little steeper, you know) by giving him a telephone in his workshop.

Reward the teen-agers who are growing up so fast with a telephone for their very own. (That could be a break for you, too!)

Easy to do. The cost is moderate. There's a choice of eight handsome colors. Ivory, beige, green, blue, red, yellow, brown and gray. Just call the Business Office of your local Bell telephone company.

*Working together to bring people together*
**BELL TELEPHONE SYSTEM**

# Administratively Speaking . . .

LET'S talk about administrative decisions, and let's keep to the easy ones—not those that are obscure and controversial. Let's look at a few steps that have a low price tag and yet bring big dividends in higher employee morale, and better public relations.

***Why don't more cities upgrade the titles they give their employees?*** Out of respect for the men themselves, each should have a title that denotes a certain amount of skill and ability. Man, of course, works for money, but he works also for recognition of his special talents and ability, which, when employed, improve the world around him.

Let the administrative head of a service department be called "Director"; his assistant, an "Assistant Director" or "Chief Engineer"; and his assistants, who probably would be in charge of plants, pumping stations, maintenance garages, should be termed "Superintendents"; and their assistants, "Operators," or "Foremen."

***Incidentally, why do the various state boards of health insist on licensing, "Operators?"*** The very least that they could do would be to attest by examination, that the man is technically qualified to be a superintendent, rather than simply a mechanic, or operator.

The Maritime Service is wiser than this. A man in charge of a ship receives Master's papers, not the certificate of a ship operator. Does anyone doubt that responsibility for the supply of water, on which the city's life and economic health depends, is not of equal or greater importance than that of running a small steamer?

***Next, why do cities force men to work in "Sewage Treatment" plants?*** Let them, instead, work in plants of "Sewage Purification." The word, "treatment" gives no real assurance that improvements are taking place, while "purification" is a positive, confident word, indicating that the liquid wastes no longer present a danger.

Carrying the reasoning a step further, why force men to be officially designated as members of a "sewer" crew? Often these men's families have to tell the position that their breadwinner holds. Let them say that he is an equipment operator in the Department of Public Works, rather than the Sewer Department. Let no youngster suffer the humiliation of being "Art Carneyed" off the playground.

In that same vein, let us pay tribute to the unknown official who first called the cut-and-cover type of refuse disposal, "Sanitary Fill." What a tragedy it would have been if he had unimaginatively called it "garbage burial!" Let us also salute those understanding officials who no longer have "garbage collectors," but now have "Sanitation men."

***When dealing with the public, why forget timing?*** Why, for example, change a street to one-way operation in late spring or summer when business is dropping and merchants can claim that the move drives away business? A city avoids unnecessary trouble if it makes the change in the fall when business is rising. Similarly, why raise water rates in the summer when the demand for water is high? Instead, change the rates in winter when the use is low. The city managers, at their recent annual meeting in Banff, Canada, were alert enough to make this an administrative topic of discussion.

None of these administrative moves actually is costly, and all will pay dividends in happier relations between the city administration and its employees, and also, its public.

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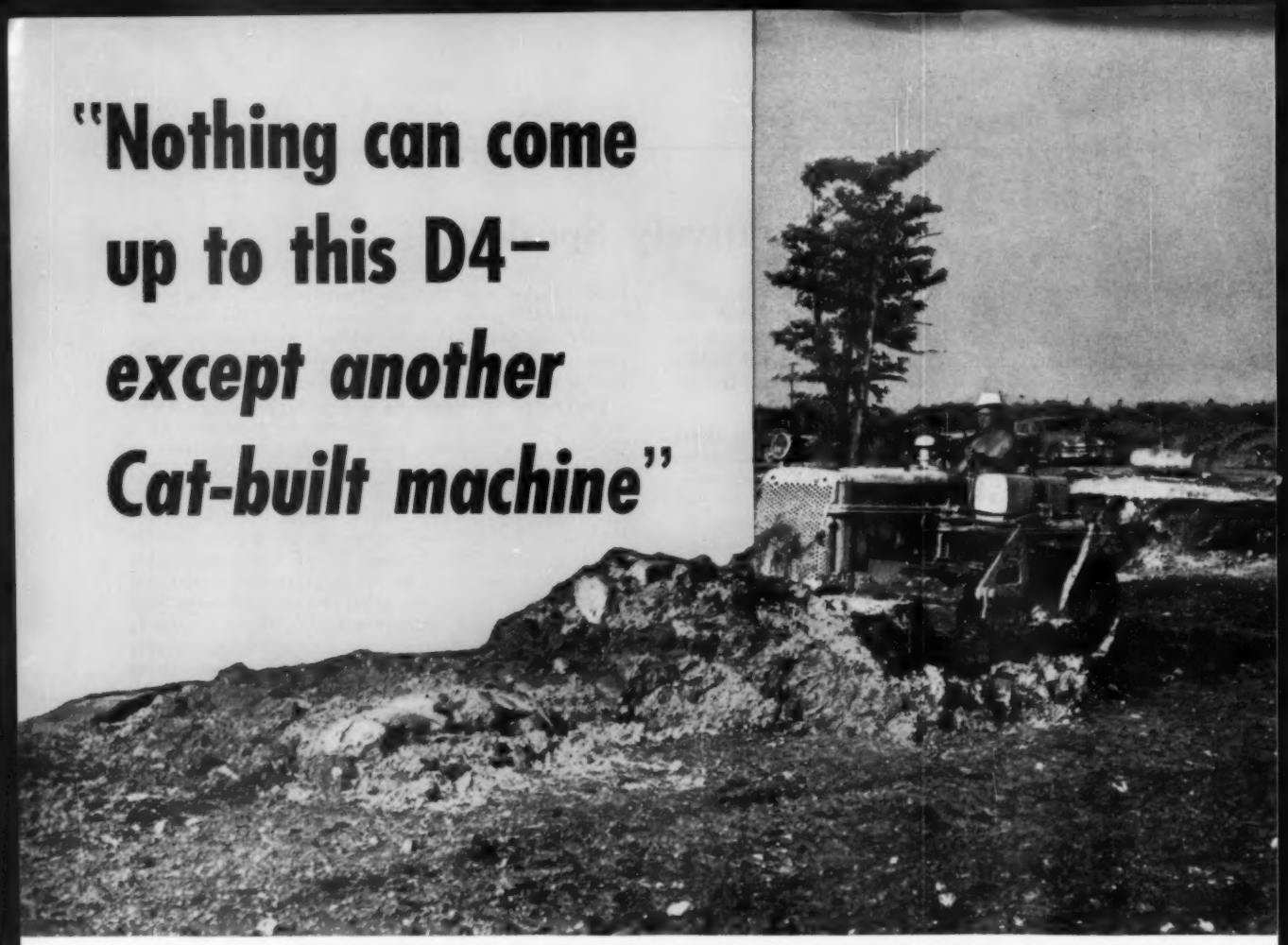
# "Nothing can come up to this D4— *except another Cat-built machine*"



THAT's the opinion of Junior Greene, operator of the CAT* D4 Tractor owned by the City of Belle Glade, Fla. In this picture the machine is bulldozing overburden and building ramps. For nine years it's been the city's utility tractor, ready to work wherever and whenever it's needed.

You can get the same kind of ruggedness and long work life in today's new D4 Tractor. From its specially hardened track shoes and pins to its husky 63 HP (flywheel) Caterpillar Diesel Engine, the new D4 is built to outwork and outlast any other tractor in its class. It's available with the exclusive Caterpillar oil clutch, which prolongs facing life and greatly lengthens the period between clutch adjustments. The Cat-built 'dozer is available with straight or angle blade to suit your operation and is of heavy-duty construction to stand up to 'dozer-busting rock work.

The D4's Caterpillar Diesel can deliver full power or idle, without fouling, on money-saving, non-premium fuel, thanks to its exclusive, large-orifice fuel injection system. And because of four-cycle design, there are no air boxes or cylinder ports to clean. Highly effective filters and seals keep lubricants in and harmful abrasive particles out of engine and moving parts.

The D4 is compact and maneuverable, yet able to do a man's-size job without pampering or down time. Your Caterpillar Dealer will gladly arrange an on-the-job demonstration. He has facts and figures to prove to you that the Cat D4 Tractor is built to do *more* work at *less* cost for *your* community than any other crawler its size. See him today. And count on him for prompt, skilled service and parts you can trust.

Caterpillar Tractor Co., Peoria, Illinois, U.S.A.

**CATERPILLAR***

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**NAME THE DATE...
YOUR DEALER
WILL DEMONSTRATE**

# Mail Bag

## *L. A. Damage Action Still Pending*

In your October 1956 issue there is an article entitled "Sewage Treatment Design Is Serious Business," by Arthur L. Wilson of the Los Angeles, California Board of Public Works (page 101). The title of Mr. Wilson's article is most appropriate and certainly a fact to us in the southern part of Santa Monica Bay who receive upon our beaches and shores and in our recreation waters the damaging results of Los Angeles' sewage disposal plant.

Mr. Wilson comments that the cities of Manhattan Beach and Hermosa Beach filed a $30 million damage action against Los Angeles over the question of beach contamination. He says this action "has been lost, but the argument continues." This statement is not true.

The action filed in Superior Court being No. 661591 is still before that court and has been heard to date only in the preliminary stage of hearings on motions and demurrers. The matter has not come to trial and has not been finally adjudicated. We of the South Bay cities are confident that when the case is tried our cause will prevail because we have been subjected to outrageous indignities by the City of Los Angeles which we are certain any fair-minded court will enjoin. We are further confident that the court will enjoin Los Angeles from using its ill-conceived plan for further disposal of ever-increasing quantities of practically raw sewage into Santa Monica Bay because scientific and engineering studies, commenced long after Los Angeles conceived its plan, tend to prove conclusively that whatever is disposed of in Santa Monica Bay will wash ashore to the detriment of the populous living by that bay and using that area for recreational purposes.

THOMAS P. FOYE, *Mayor*
*Manhattan Beach, Calif.*

## *From the Author:*

The statement in the article refers to this original suit, Case No. 658951. The printed statement is true, in that the plea of those bringing suit was found to be legally improper, a demurrer was sustained by Judge Joseph W. Vickers of Los Angeles County Superior Court on May 8, 1956, and the case later dismissed.

Since the time of writing the article a new suit has been instituted—Case No. 661591 mentioned by Mayor Foye in his letter to you. This new case is that of the *People of the State of California* vs. *The City of Los Angeles*, and is for the same amount of damages as the original, unsuccessful case, namely $30 million. The new suit is in process at the present time.

In June of this year I left my position with the Board of Public Works and have not been keeping tabs on public works matters. Otherwise I might have been able to give you the later developments prior to your deadline for the October issue.

I trust that this clarifies the situation to everyone's satisfaction.

ARTHUR L. WILSON
*Civil Service Dept.*
*Los Angeles, Calif.*

## *Municipal Murals On Outdoor Structures*

May I express my appreciation for the editorial treatment of the Coral Gables Treatment Plant mural in the August issue of THE AMERICAN CITY. (See "Cigarettes for Sewers, Murals for Digesters," p. 125.) The use of the two photographs, their captions, and the comment "refreshingly original" offset the slight mention of them in the article and I am most appreciative.

It has been a four-year goal—exterior murals on public buildings—and I had hoped to devote the rest of my life to such activities. The paint of course is not a commercial paint; it is the result of three years of research with one of the leading resin chemists of the country to provide a formulation for my exterior mural work which would have a lifetime sufficient in this subtropical climate to justify such monumental work as that done at Coral Gables.

The mural was painted with a production spray gun and consists of a built-up film coat varying from a minimum of six coats to a maximum of eighteen. The operation was one of drawing entirely with masking tape and covering all previously painted areas. Approximately 10 months were involved—half in historical research and in the conception of the mural and half in its actual execution.

JOHN ST. JOHN
*P. O. Box* 1314
*Coral Gables, Fla.*

## *Columbia, Tenn., Rents Police Cars*

We have leased two four-door cars at $120 per month for the first 12 months. The city then has an option to renew the lease on the two cars for the next six months at $90 per month per car, and then another alternate to extend the lease another six months at $80 per month per car.

These two cars are the Special Police Pursuit cars that Dodge Corporation offers to municipalities for police work. The cars are equipped with two-way radios, sirens, and red lights. The lease provides that the local Dodge agency is to provide all mechanical repairs, oil changes, and lubrication jobs at no expense to the city. The city is responsible for any damage to the cars as the result of an accident and carries the insurance under our fleet liability program.

Because the cost of maintaining our equipment was too high, we went to a lease arrangement. Prior to this, the city had purchased police cars by bid. Incidentally, the Dodge cars were selected for a lease arrangement on a bid basis.

About six weeks after this arrangement was concluded, we leased a similar Dodge car for the Chief of Police. Since this automobile was a demonstrator and was a two-door model car, the rental price was somewhat less than for the other cars. This rental arrangement is $95 per month for the first year, $85 per month for the next six months, then $75 for the last six months. We agreed to keep this car a minimum of two years, since it will not receive the service that the other two cars will receive.

LOWELL LONG, *City Manager*
*Columbia, Tenn.*

# HORTON WATERSPHEROID

**engineered for larger capacity . . .**
**designed for beauty**

The Horton Waterspheroid , "big brother" to the Horton Watersphere®, is a new type of elevated tank, designed for greater capacity and striking appearance. Spheroidal instead of spherical in shape, the Waterspheroid is built in capacities to 500,000 gallons. Base of the structure is designed to occupy a minimum of ground space and be used as a pump house or for storage.

The attractive Horton Waterspheroid provides a dependable gravity pressure water supply that is available day or night to meet normal or emergency water needs. Further information on the Waterspheroid, or other Horton® elevated tanks, may be obtained by writing our nearest office.

*500,000-gal. Horton Waterspheroid at Northbrook, Ill. It is 135 ft. to the top of the water line and the spheroid is 55 ft. 6 in. in diam.*

CBI

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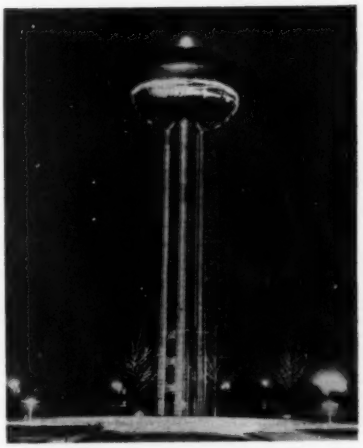
## Elevated-Tank Landmarks



*Left.* **Paul Bunyan and his Blue Ox would have been impressed by this "golf tee."**

*Right.* **This shimmering, stainless-steel structure has been adopted as an engineering insignia by General Motors Corp.**

THE trend toward capitalizing on, rather than apologizing for elevated water towers has received fresh impetus outside the municipal field.

Chicago's famous Tam O'Shanter golf course has transformed a 40,000-gallon Watersphere into a giant golf ball on a red tee rising 65 feet out of the ground —a sight that might have induced Paul Bunyan to give up his traditional trade of a lumber jack and replace it with the international sport of golf.

General Motors has utilized its 250,000-gallon tower to form a strikingly graceful structure for its Technical Center in Detroit. The structure consists of shining, stainless steel. General Motors uses it as the insignia for this important research and engineering institution.

Both tanks were erected to provide water for sprinkler and fire-fighting purposes. Chicago Bridge & Iron Company was the builder in each case.

## A Second Reservoir for Little Rock

IN about another year, Little Rock, Ark., will place its new 64.4 billion gallon reservoir into service, putting an end to the use of water from the Arkansas River. The river water is unsuitable for domestic and most industrial uses because of its high salt and other mineral content.

Almost 10 years ago, in 1947, the Water Board realized more water was needed than could be provided by Lake Winona, the city's present 14 billion gallon reservoir, and its single transmission main, a 33-mile, 39-inch diameter reinforced concrete pipe line. After two engineering reports and eight years of work that finally resulted in a general election to approve a needed rate increase, the signal was given to go ahead with the Maumelle project. In the meantime, river water supplemented the reservoir supply during the hot summer.

The new reservoir will be about 12 miles long and 45 miles wide at the widest point. The Lake will cover an area of about 13.9 square miles at an average depth of 22 feet. The safe yield of the lake and its 120 square mile watershed is estimated at 83 mgd for the worst drought on record.

The dam will be about 2,100 feet long and 70 feet high and will contain about 900,000 cu. yds. of earth fill.

A new 48-inch pipe line about 11 miles long will connect the new reservoir to the present auxiliary lake just outside the city.

Filtration capacity has also been exceeded in recent years, and to overcome this, an 8.0 mgd addition is being added to the existing 23 mgd plant. This is considered to be about the economical limit of filter capacity that is ready for development at the present site.

According to present predictions, a second filtration plant will be needed sometime within the next four to seven years. This plant will probably be constructed near the western limits of the city.

Plant additions are being constructed under the supervision of Burns & McDonnell Engineering Company of Kansas City, Mo.

The Water Board engaged the consulting firm of Alvord, Burdick & Howson, Chicago, to study the two proposed reservoir projects and recommend the one most advantageous to the city. After selection of the plan to be followed and securing a rate increase, the Water Board entered into an engineering contract with K. W. Lefever and Marx A. Mehlburger, the instigators of the Maumelle project, together with Malcolm Pirnie of New York, for plans for the development of the new reservoir.

BEVERLY E. RYAN, P. E.
*Assistant Engineer, Little Rock Municipal Water Works*

**It's evident from this photograph that work is in progress on the dam gates and on the spillway.**

# CAT* No. 212

## does a man's size job in Cle Elum

The City of Cle Elum, Washington, has 32 miles of streets and an average winter snowfall of 60 inches. All snow clearance is handled by a sturdy Caterpillar No. 212 Motor Grader, now 5 years old. With blade extended, it bucks the snow into windrows in the middle of the town's wide streets, leaving a traffic lane on each side. After one 14-inch fall the machine cleared the entire city in one shift!

Street Superintendent Angelo Sibillia says: "It's a wonderful piece of machinery. It gets the snow off the streets in a hurry—a great help in keeping the town functioning normally."

While the No. 212 is the smallest and lowest priced grader in the Caterpillar line, it's built with all the rugged stamina found in the larger machines. Its dependable 50 HP Cat Diesel Engine is balanced with weight, speed and traction for steady performance. And it's built throughout by one responsible manufacturer, backed by one reliable service source.

The No. 212 is an ideal machine for year-around work in many smaller communities. It costs less to buy, less for fuel and repairs. It's built to stand up year after year with practically no down time. Operators like its positive-acting power controls, easy, accurate steering, quick blade positioning and complete job visibility from the seat. New *tubeless tires* are an added economy feature. They eliminate tube and flap trouble and greatly reduce tire down time, yet cost no more.

Let your Caterpillar Dealer show you how a No. 212 can save money for your municipality. His complete parts and service facilities will stand behind your investment.

Caterpillar Tractor Co., Peoria, Illinois, U.S.A.

**CATERPILLAR***

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**99% OF ALL CAT MOTOR GRADERS EVER BUILT ARE STILL AT WORK**

This 23-foot-high wooden trestle served as the main connecting link between the city and its Burma Heights subdivision.

## Three Times as Wide At About Half the Cost

### *Quincy, Fla., replaces old wooden railroad overpass with structural plate pipe*

FOR many years an old wooden bridge spanned the railroad track at the junction of Ninth Street and Bonita Avenue, serving as the main link between the city and its Burma Heights subdivision. The structure was failing and had to be replaced; the problem was to do it as economically as possible.

The old overpass, constructed of wood piling on mud sills, consisted of five spans and was 62 feet long, 20 feet wide, and 23 feet high at the track. Original plans were to replace it with a new trestle that would be 100 feet long but only 16 feet wide, having a central concrete span resting on 16-foot-high concrete piers. The estimated cost for this bridge was $78,000. The city could not swing its share of the cost, so requested a new design.

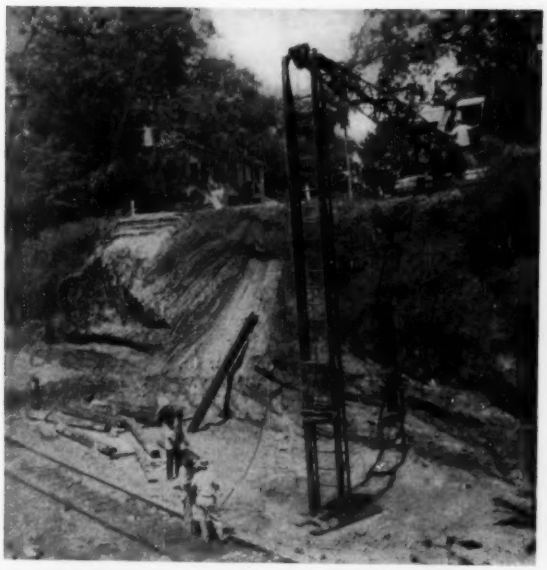
The new design called for an Armco multiplate arch resting on 7½-foot abutments placed on a timber pile foundation. Cost estimates for this type of construction were only $47,000.

Doyle Pope of Quincy turned in a low bid of $39,384.25 and was awarded the contract. Total costs, including engineering and attorney's fees, amounted to $42,326.60.

The new overpass is one of the largest of its type and the only one of its kind in the southeastern part of the country. The multiplate arch is 94 feet long and is made up of 8-foot-long plates 1 gage thick. The abutments rest on six timber-pile foundations. Careful placement and compaction of the fill made possible the shallow cover over the crown. The concrete end walls and concrete bagged riprap give the structure a trim and pleasing appearance.

City officials are pleased not only with the savings in cost, but with the structure itself. Instead of a 16-foot-wide overpass, the new bridge provides a 50-foot-wide crossing.

Marshall and Jennings, Consulting Engineers of Tallahassee, Fla., were in charge of design and construction.



The old structure has been removed and pile driving for the timber-pile foundation on the new overpass has been started.

Backfill operations followed erection of the 84-foot-long, 1-gage-thick multiplate arch. Careful placement and compaction of the fill was responsible for the shallow cover over the crown.

Result—a strong structure of simple design, free from costly maintenance. Concrete bagged riprap is economical and efficient.

# Now...smooth, wide and handsome ...in durable Asphaltic concrete

Concord, New Hampshire's Main Street isn't a rough-riding street anymore. It's smooth-riding, quiet and comfortable. Safe and skid-resistant . . . Asphaltic concrete.

It's wider than it used to be, too. With ample space to move. To pass. To park. And modern Asphalt construction helped speed the job.

What's more . . . the entire widening and resurfacing job was done at a satisfying low cost. And traffic was maintained all through construction.

Generations to come will appreciate this new Asphalt pavement. For its smooth riding. Its durability. Its easy, economical maintenance.

From every point of view . . . including the taxpayer's . . . choose Asphalt construction on your new designs. Then you'll be sure to be safe.

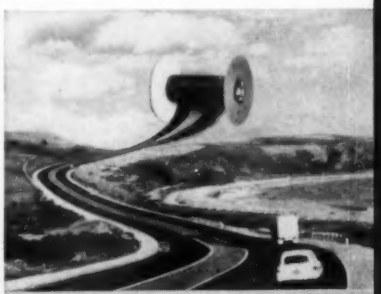
Write for a helpful new manual on Asphalt construction. **Thickness Design of Flexible Pavements for Streets and Highways** has been brought right up to the minute. It's yours for the asking. Write: Dept. X.

**Mr. Woodbury Brackett, City Manager of Concord, N. H., writes:**

*"New Hampshire's capital city is pleased with its choice of Asphalt pavement for its busy main street.*

*"Traffic kept moving during construction, with a minimum of inconvenience.*

*"Our Asphaltic main street is easy to keep spotlessly clean, traffic lines show up clearly and pavement cuts for utility repairs are easily made and replaced."*



Ribbons of velvet smoothness . . .
MODERN **ASPHALT** HIGHWAYS

**THE ASPHALT INSTITUTE,** Asphalt Institute Building, College Park, Maryland

River Front Drive required widening of one arch under the Main Street bridge. Note new approach completed and in use.

Additional approaches to Main Street and Broadway bridges will permit fuller bridge use without increasing congestion.

## New Expressway for Little Rock, Ark.

WHEN completed, Little Rock's new River Front Drive will relieve traffic congestion in the business area, especially in the vicinity of the approaches to the Main Street and Broadway bridges across the Arkansas River between Little Rock and North Little Rock. In addition, the capacity of the bridges will be increased because of several new approaches. Congestion at the approaches limited the combined bridge capacity to about 68,000 vehicles per day. The new drive and approaches will increase this to an estimated 85,000 vehicles per day without widening the bridge spans.

The new drive will also serve the rapidly growing western section of Little Rock. At present, most traffic is forced through the business area when traveling between the east and west portions of the city.

### State and Federal Aid

The divided highway, about half completed, will be about one mile long and consists of two 12-foot lanes in each direction with a paved, 8-foot emergency lane along most of the way. It is of concrete construction and is of the partially limited access type. The roadway will pass under the two aforementioned bridges but will have access ways to them.

Total cost of the program is estimated at approximately $3,450,000 made up of real property costs of about $1,950,000 and $1,500,000 in construction costs. This amount is divided approximately as follows:

| | |
|---|---|
| City of Little Rock | $975,000 |
| Arkansas State Highway Dept. | 700,000 |
| Public Roads Administration | 1,775,000 |

This 5-story building was moved about 300 feet to make room for the new drive.

There will be no increase in taxes resulting from this program. It is estimated that the value of property lost to the tax role will be more than offset by increased values throughout the business district and by savings in time and money to the people who drive on this public expressway.

### Jail Moved

Moving the Pulaski County Jail was one of the larger projects connected with the new drive. Right-of-way requirements made it necessary to move the five-story stone structure about 300 feet to a new location considerably lower than the original site. Early summer rains stopped the work on several occasions, but the relocation project was completed in spite of the interruption and without mishap.

The City of Little Rock sponsored the River Front Drive and the Arkansas State Highway Department is acting as Project Engineer. Mark Garver of Garver & Garver, Consulting Engineers of Little Rock, represents the contribution of the city to the well-planned and much-needed project. Little Rock is experiencing nationwide problem of traffic congestion and is beginning to help alleviate it.

# GREAT NEW IDEA in tractors and attachments

52 hp **Model 404** with ⅜-yd. loader works as primary equipment . . . as backup machine . . . as utility or cleanup tool. Tractor is available with either gasoline or diesel engine.

42 hp **Model 303** with angle-dozer and rear-mounted backhoe provides ideal means to clean up after main-line or intermediate machines . . . keeps equipment costs relative to job.

34 hp **Model 202** and backhoe — 5 sizes, 12" to 36" buckets. Swings 180°. Ideal for scattered "work and run" jobs — anywhere. Digs to depth of 13 ft.

42 hp **Davis Pit Bull** features torque converter . . . "foot-shift" direction changes . . . five speeds forward, five reverse. Frequently outworks more expensive, single-purpose rigs.

Fork Lift **Model 202** lifts 4000 lbs. with 10 ft. mast, has extension with 21 ft. reach for lighter loads.

**M-H-F**

## WORK BULLS

**Now from one source . . . a package of 5 versatile, low-cost tractors with 20 power-matched attachments**

Caught in the squeeze between soaring demands for service and the cost of labor and equipment? Work Bulls provide an answer. Work Bulls pay off as primary equipment . . . as backup machines . . . as utility or cleanup tools.

For an unusually small investment you can put a Work Bull on your job—use it to dig, doze, load, lift and handle scores of other assignments. Attachments can be switched in less time than it takes for a smoke break.

And Work Bulls go anywhere, work anywhere . . . keep busy day long, year round. In the off-season, Work Bulls continue to earn their keep plowing snow, hauling wagons, maintaining coal and other stockpiles or working around the yard as fork lifts.

What's more, Work Bulls are built to "construction standards"—tough, rugged and ready to give you years of service with only routine maintenance. Remember, with Work Bulls you deal with only one source for sales and service on both tractor and attachments.

Why not ask your retail distributor to demonstrate how a Work Bull will pay off for you. Write for his name and a free, 24-page catalog.

**M·H·F WORK BULLS**

*Division of Massey-Harris-Ferguson, Inc.*

**21-L Quality Avenue • Racine, Wisconsin**

## Sanitary Landfill Reclamation

FOR almost 10 years Austin, the capital city of Texas with a present estimated population of 178,000 has been using the sanitary landfill method for the disposal of refuse and rubbish.

The city's trucks collect almost 600 loads, or about 1,480 tons of refuse weekly. The crews provide collection service twice weekly in the residential areas, while in semibusiness and apartment house areas service is provided three and four times per week. In the downtown and other business areas collections are made each night, except Sundays. No contractors or private refuse collectors operate in this city.

Most all of the land that is used for the sanitary fill operation is private property provided at no cost to the city. Most all land owners are glad to have their erosive land rebuilt into useful and fertile fields. Many of these areas are old gravel or sand pits. One of the sites that is now being used is owned by the city within the boundary of a large park. After this area is completely filled it will be made a part of this park system. Three sanitary landfills are currently in operation and are located at various parts of the city so that hauling cost is cut to a minimum.

An Allis Chalmers HD-11G tractor is used at this park sanitary fill site. All refuse, after being dumped, is compacted by this tractor, then covered each night with a light layer of earth and the area is gradually built up in this manner. After the area is completely filled, it is then brought up to proper grade with 2 or 3 feet of earth fill. Such cover seals in the entire fill and leaves a sanitary and clean area for park and other future use.

**The big tractor-shovel (above) gets cover material from the banks of the fill area. Each evening the tractor covers all the refuse with a layer of earth, as shown in the photo below.**

## McKeesport Plant to Turn Trash into Fertilizer

NEARLY 500 officials from cities and industries across the nation gathered at McKeesport, Pa., recently to inspect a new plant designed to turn garbage and trash into a marketable fertilizer. The plant was designed and built by Organic Corporation of America, 247 Fort Pitt Blvd., Pittsburgh 22, Pa.

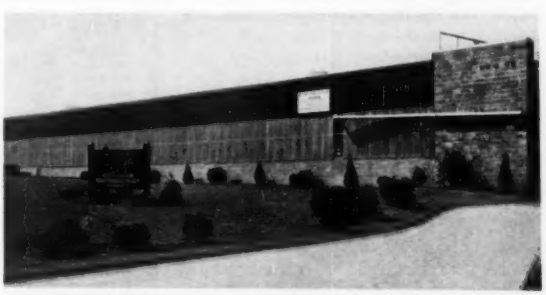
The company describes the process as a combination of pulverization plus enzymes, or "hot fermentation." It reportedly will transform the refuse into a dry, granular fertilizer in 14 to 21 days. The company states that the machinery used will permit the plant to receive glass, wooden boxes, tin cans, and easily processed refuse.

In detail, the plant is arranged so that trucks discharge the refuse into a loading dock. A conveyor belt then transfers it across a set of magnets that removes most of the metallic material. The belt conveyor is arranged so that excess liquor can be drained away after the refuse leaves the magnets. The refuse then passes through a pair of Gruendler grinders that pulverizes it to a size that the company feels encourages decomposition. The pulverized refuse is then inoculated with enzymes prior to its entry into the fermentation area. Here temperatures are expected to range from 140° F. to 175° F. during the transformation period. After the decomposition cycle is completed, the refuse is transferred to a hopper and fed across a screen. That portion passing through the screen is bagged for sale, and the balance is returned to the grinders for reprocessing.

The McKeesport plant cost approximately $350,000, and has been designed to receive 140 tons daily.

The company currently is offering to build plants under two general proposals. In the first, the company will build the plant on city-owned property, leased for a period of 10 years. At the end of this time, the property reverts to company ownership. The city delivers and pays for the disposal of garbage and trash.

Under the terms of the second proposal, the company furnishes a complete plant ready to operate, paid for by the city. The city then leases the plant to the company and delivers all its garbage and trash to the plant, and is not charged for the dumping privilege.



**The new McKeesport plant is designed to turn refuse into fertilizer, the consistency of which will be dry and granular.**

# *Our Municipal Notebook*

## Record Number of Bond Proposals Ok'd in November Election

APPARENTLY HAPPY with the nation's generally good economic condition, voters in November's election broke two records when they balloted on state and local bond referenda.

### On the Municipal Level

First they voted on the greatest dollar amount of bond proposals ever submitted to state and local electors. Some $2.68 billion in proposed debt spending was on the ballots of eight states and 315 municipalities. This total soared far above the previous high of $1.6 billion in debt which appeared on the ballots in 1946.

Second in approving $2.5 billion of the requested spending, the voters far surpassed the 1954 record of $1.4 billion. The high approval rate erased last year's dismal results when electors rejected approximately two-thirds of the $1.5 billion of bond proposals.

Although the largest portion of the funds voted in the municipalities continued to be earmarked for new schools, extensive highways and street improvements, new sewage disposal and water supply facilities, and new public buildings, including hospitals appear high on the list of proposed improvements. San Francisco, San Diego, Seattle, and Baltimore led the cities in the country with big bond issues for schools. Wichita, Kans., Philadelphia, and Baltimore led in proposed spending for water supply facilities, while the Hartford, Conn., Cincinnati, and Cleveland areas are slated to spend big amounts for sewers. An $8.9 million proposal for redevelopment in Cincinnati got voter approval.

### On the State Level

On the state level, the proposed spending was slated for such purposes as highways, bonuses for veterans of the Korean war, and state loans to help veterans purchase homes and farms. California, which led the states with the greatest total in proposed bond issues, won voter approval for a $500 million veterans' home loan fund and for $300 million to be used for schools and colleges. In New York a $500 million state highway issue was approved, but voters there rejected a $100 million middle-income housing proposal. Bonus payments to Korean war veterans were approved in Ohio, West Virginia, Iowa, and Rhode Island.

While the widespread approvals for new spending brightened the prospects for the nation's cities and towns as they struggle to keep pace with rapid population growth, some observers cautioned that voter authorization of the proposed bond issues was merely one hurdle in the quest for money. The next hurdle for most municipalities will be to sell the authorized bonds on today's increasingly tough bond market. With higher interest rates facing the nation's cities, it may be that many of the bonds will be held off the market until more favorable interest rate trends develop. It is expected that municipal finance officers will watch the developments of the next few months closely.

## *All-America Cities Award Finalists Announced*

TWENTY-TWO CITIES from 16 states and Alaska were finalists this year in the All-America Cities Award contest. The annual event, jointly sponsored by the National Municipal League and *Look* Magazine, make awards to individual cities for some outstanding community or civic achievement as a result of intelligent and concerted citizen action.

The 22 municipalities were invited by the National Municipal League meeting at Memphis, Tenn., last month to plead their "case" before an award jury for a place on the "All-America" team. Names of the 11 cities chosen as 1956 winners will be announced early next year.

The finalists were: Altus, Okla.; Anchorage, Alaska; Bloomington, Minn.; Brattleboro, Vermont; Denver, Colo.; Duluth, Minn.; El Campo, Texas; Elgin, Ill.; Kalamazoo, Mich.; Laurinburg, N. C.; Oakland, Calif.; Oskaloosa, Iowa; Park Ridge, Ill.; Prescott, Ariz.; St. Louis, Mo.; Santa Fe, N. M.; Springfield, Ill.; Springfield, Mo.; Superior, Wis.; Tacoma, Wash.; Torrance, Calif.; Zanesville, Ohio.

### REPRESENTATIVE MUNICIPAL BOND ISSUES

#### October 23 to November 7, 1956

| *Date of Issue* | | | *Purpose* | *Average Maturity (Years)* | *Net Interest Cost or Basis (Per Cent)* |
|---|---|---|---|---|---|
| 10/23/56 | Lombard, Ill., Park District | $ 590,000 | Park | 13¼ | 3.7403 |
| 10/24/56 | Preston, Minn. | 35,000 | Swimming Pool | 7¼ | 3.40 |
| 10/24/56 | Sea Cliff, N. Y. | 51,000 | Fire Truck and Municipal Building | 5½ | 3.79 (basis) |
| 10/25/56 | Cook Co., Ill., Leyden Community High School Dist. No. 212 | 5,040,000 | School Building | 11⅙ | 3.995 |
| 10/25/56 | Fairfield, Conn. | 462,000 | Street Improvement | 9¾ | 2.90 (basis) |
| | | 538,000 | Storm Sewer | 10½ | |
| | | 1,100,000 | School (1956) | 10½ | |
| | | 400,000 | Sewerage Act of 1949 Series D | 10½ | |
| | | 1,350,000 | Sewer, Issue of 1956 | 12¾ | |
| 10/29/56 | Oakville, Conn., Fire District | 450,000 | Sewer | 9⅝ | 3.74 (basis) |
| | | 50,000 | Water | 5½ | |
| 10/29/56 | Sussex, Wis. | 150,000 | Corporate Purpose | 10⅝ | 3.827 (basis) |
| 10/30/56 | Palatine Bridge, N. Y. | 42,000 | Sanitary Sewer System | 9⅙ | 3.99 (basis) |
| 10/31/56 | Cicero, N. Y., Water District | 39,500 | Water | 10¼ | 3.77 (basis) |
| 10/31/56 | Haverhill, Mass. | 65,000 | Sewer | 7 | 3.17 (basis) |
| | | 60,000 | Street | 4⅝ | |
| | | 45,000 | Water | 5 | |
| 10/31/56 | Huntington, N. Y. | 216,000 | Public Improvement 1956 | 5⅕ | 3.28 (basis) |
| 10/31/56 | Midland, Mich. | 178,000 | Water Main Improvement Special Assessment Program | 3 | 2.7327 |
| 11/ 1/56 | Chisago City, Minn. | 11,500 | General Obligation, Hospital | 7⅕ | 4.6753 |
| 11/ 1/56 | Sylvania, Ohio | 145,000 | Sewer Construction | 14⅕ | 3.65 (basis) |
| 11/ 7/56 | Duarte School District, Los Angeles Co., Calif. | 105,000 | Building | 12½ | 4.453 |

Compiled from *The Bond Buyer*

# BRING ON YOUR RIVERS!

## CLOW RIVER-CROSSING CAST IRON PIPE TAKES 'EM "IN STRIDE"!

**EASY TO LAY.** As easy to make up as a standard flanged joint. Lower labor installation cost because of ease of joint make-up and longer laying lengths.

**ONLY A RATCHET WRENCH NEEDED.** No split parts. Fewer parts—each joint consisting of one complete pipe, one solid follower ring, one solid ring gasket, bolts and nuts.

**FULL 15° TURNING DEFLECTION** with absolutely no reduction in the full internal opening area—therefore, no abnormal pressure-drops at deflected joints. Deflection stresses evenly distributed among all the bolts.

**LONGER LAYING LENGTHS**—approximately 18'6"—faster installation, lower costs. However, lengths may be varied to suit conditions. For example: 6 foot, 12 foot or other special lengths may be advisable to suit required curvature.

*Mail coupon for complete information on Clow Ball-and-Socket River-Crossing Pipe. No obligation, naturally.*

**JAMES B. CLOW & SONS**

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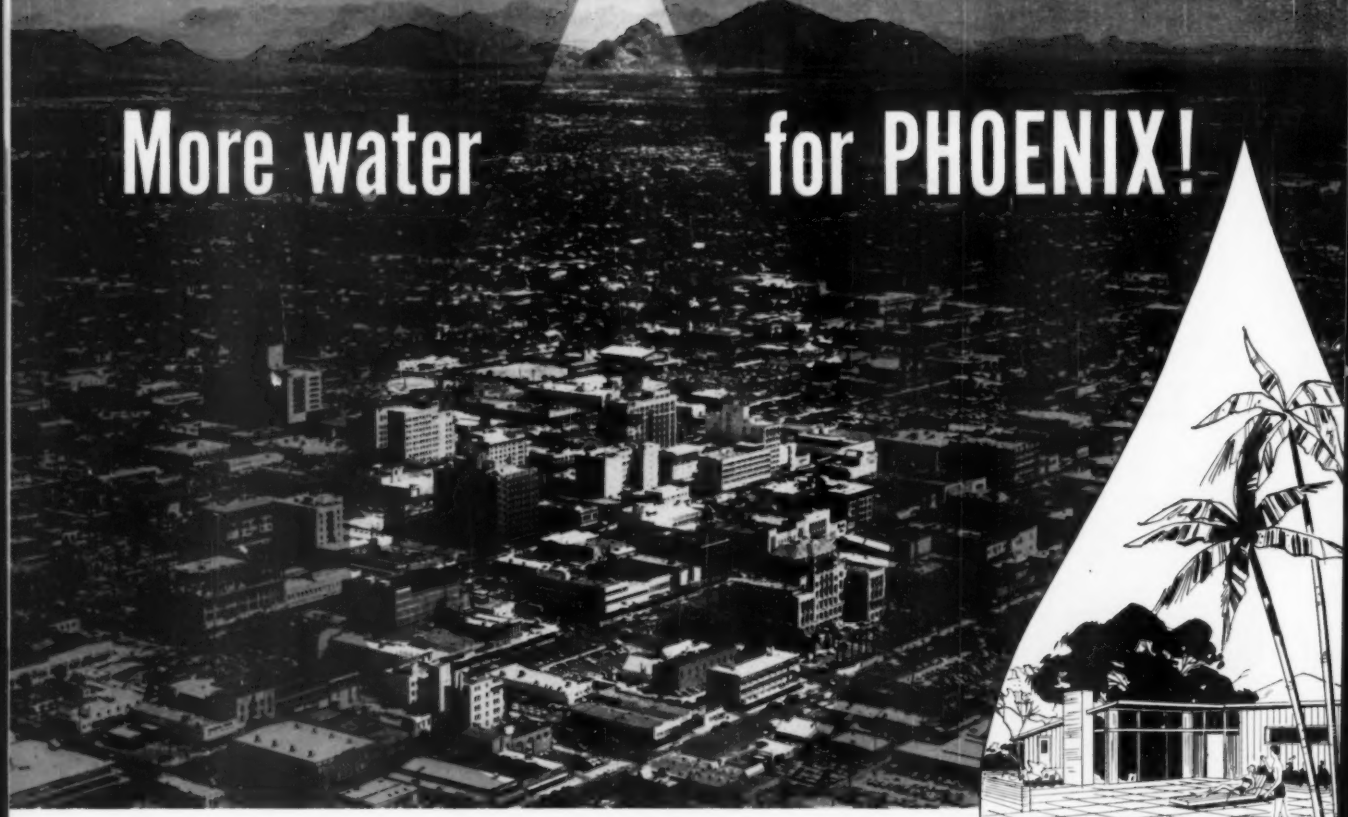
Please send me, without obligation, details and specifications of Clow Ball-and-Socket River-Crossing Pipe.

Company_____
Street Address_____
City_____ Zone____ State_____
Individual's Name_____
Position_____




## Another city *using* AMERICAN'S *reinforced concrete pressure pipe for water supply lines*

The City of Phoenix, Arizona is another of the rapidly growing cities of the Southwest which have faced tremendous water supply problems and have met them successfully. The population of Greater Phoenix has increased almost 50 per cent in the past five years. An annexation program is currently increasing the rapid expansion of the City of Phoenix which is one of the fastest growing cities in the nation.

During 1953 American Pipe and Construction Company, through Fisher Contracting Company, general contractors, supplied Phoenix with more than 37,000 feet of large diameter concrete pressure pipe for a line which increased the Phoenix primary feeder capacity from 100,000,000 MGD to 210,000,000 MGD. The pipe furnished was pre-stressed concrete cylinder pipe designed for the operating pressures established under specifications prepared by Yost & Gardner, consulting engineers for the City of Phoenix.

American has helped to meet the special problems faced by Phoenix water officials by designing and supplying reinforced concrete pressure pipe especially for conditions in the Phoenix area.

A recent merger with Hooper Concrete Pipe Company in Phoenix gives American another permanent plant from which to serve the cities of the Southwest.

American Pipe and Construction Company makes available 49 years of experience and extensive production facilities to help solve any water supply problem. There is a type of American pipe to meet any requirement. Write or phone for complete information.

5605

American PIPE AND CONSTRUCTION CO.

**Concrete pipe for main water supply lines, storm and sanitary sewers, subaqueous lines**

**Mail address:**
Box 3428 Terminal Annex, Los Angeles 54

**Main offices and plant:**
4635 Firestone Blvd., South Gate, Calif., Phone LOrain 4-2511

**District sales offices and plants:**
Hayward and San Diego, Calif., Portland, Ore., Phoenix, Ariz.

## *Underwood's Electronic "Brain"*

A NEW medium-scale electronic computor, Elecom 125, was previewed by the press at Underwood's data processing center, One Park Avenue, New York City, recently.

Fred M. Farwell, Underwood president, introduced the Elecom, noting that its first assignment would be to predict the winner of the national presidential election.

John Daly, ABC Vice President in Charge of News, announced that the American Broadcasting Company would station a remote TV unit at the data-processing center election night and that the Elecom's predictions would be aired every 30 minutes. Suffice it that by 9:05 p.m. the machine predicted not more than 71 electoral votes for Stevenson, and in actuality the final figures were 74.

Priced at $350,000, the Elecom 125 system consists of the file processor and the electronic computor. The processor sorts, collates, separates, and categorizes data, relieving the computor of these routine operations. The computor performs arithmetic calculations, updating, and summary compilations. Mr. Farwell emphasized that the machine was designed expressly for handling business records.

## *New Responsibilities for Building Inspectors*

SOME 75 municipal building officials, mostly from Florida, recently gathered at the University of Florida to discuss problems bred by the biggest building boom in the nation's history. The advantages of the new structural method of prestressed concrete were reviewed.

In Florida alone during 1955 building construction increased by 23% to a total of $1,047,000,000. It was pointed out that not enough money is spent on research from a human standpoint, that homes should be designed and built to meet more than the physical needs of the people in them, and new codes should be developed.

H. L. Lindsay, code and regulations specialist for the Urban Renewal Administration, Atlanta, Ga., commented that any effective development program is dependent on strong code enforcement. However, the need for code enforcement was no excuse for obsolete regulations. M. L. Clement, director of the Southern Building Code Congress, Birmingham, Ala., recommended the southern code as having flexibility and scope. It is used by a total of 193 southern municipalities.

The building officials also heard a panel composed of an architect, a construction manager, and a consulting engineer, evaluate the building inspector. He should combine training, experience, and integrity. He should aim for better building. His role in regulation enforcement should be clearly defined and uniform. The code should be designed for the public protection and made available as a guide to architects, contractors, and engineers.

O. M. Pushkin, chief building inspector at Miami Beach, Fla., and president of the Building Officials Association of Florida, summed up the purpose of the course: to provide the means whereby building officials can improve their knowledge of methods and techniques of building and building inspection and thereby make their communities better, safer, and more attractive places in which to live. Re-elected with Mr. Pushkin for the next year were Ralph W. Jones, Jr., Orlando, secretary-treasurer; Walter Ruby, Lakeland, board director. Named to office for the first time was Ralph A. Hughson, Delray Beach, vice-president.

## *ASPO Reports Planner Salaries Rising*

THE SALARY scale of city planning officials is on the rise, and more jobs at higher pay are available than were a year ago, according to the latest spot check of planning personnel made by the American Society of Planning Officials.

City planning directors who are considering staff additions may be interested in the statistics brought out by the report based on monthly job listings in the ASPO Newsletter Supplement.

On the credit side, the report shows that during August and September of this year the Supplement listed 125 *new* jobs whose medium salary was $5,800. This can be compared with the months of January and February when 121 *new* jobs were advertised with a medium salary of $5,400.

During the first nine months of 1956 the Newsletter recorded 40 jobs at $8,000 or more and 15 of these were at $10,000 or over, while for the entire year of 1955 only 19 jobs at $8,000 or more were advertised and only five of these were at $10,000 or over. Top salary listed by ASPO for the member of a planning staff is $22,500 although it is believed that there is one at $25,000. However, the top salary listed for the current year was $17,000 compared to one at $20,000 advertised in 1955.

On the debit side, the report finds that on the whole planning directors' salaries are "all much too small" when compared with those in private enterprise for positions of equal responsibility. Salaries for planning directors vary greatly in the United States even within the same population group and a few are "absurdly small" when compared with other cities in the same class. The comparatively low wage scale for planning personnel, according to the report, is contributing to the low supply of planners.

The distribution of salaries of city planners in the two periods of January-February 1956 and August-September 1956 shows a decided upward movement:

| | Percentage of Positions, 1956 | |
|---|---|---|
| Salary | Jan.-Feb. | Aug.-Sept. |
| Less than $4,000 | 1 | 0 |
| $4,000-$4,999 | 33 | 17 |
| $5,000-$5,999 | 30 | 40 |
| $6,000-$6,999 | 19 | 24 |
| $7,000-$7,999 | 12 | 7 |
| $8,000 and over | 5 | 12 |
| Median salary | $5,400 | $5,800 |



# *Our Municipal Notebook*

## *Renewal Study to Analyze Urban "Skid Rows"*

THE CITY OF CHICAGO will soon

committee of the Lafayette Chamber of Commerce formed Lafayette Parking Incorporated with the purpose to raise funds.

corporated has had the unexpected effect of stimulating further public and private activity for increased parking space. Just beyond the cen-

# REPAIR BROKEN MAINS IN 15 MINUTES!

**One-man job . . . any pressure . . . terrific economy! Not only splices main, but *sealed gasket* absorbs future traffic jar or frost heaving! Refer to page 8 of our new Catalog GW. M. B. Skinner Co., South Bend 21, Indiana.**

SIZES 2" TO 24" INCL.

## SKINNER-SEAL SPLIT COUPLING CLAMP

## *Renewal Study to Analyze Urban "Skid Rows"*

THE CITY OF CHICAGO will soon undertake a special study that should result in practical guidance for all cities in developing programs to combat "skid row" areas.

The Chicago study will aim at establishing all vital information concerning skid row areas in Chicago and in other cities, according to D. E. Mackelmann, Chicago's Deputy Housing and Redevelopment Coordinator. Specifically, the city's objectives in undertaking such a study are: first, the preparation of renewal plans to provide adequate housing for skid row inhabitants, and second, the development of a comprehensive program to prevent the recurrence of skid rows in the city.

The study has the support of several city agencies, including Office of Housing and Redevelopment Coordinator, Chicago Plan Commission, Welfare Council of Metropolitan Chicago, Mayor's Committee on the Rehabilitation of Man and the Department of Welfare of the City.

Estimated total cost of the project is $73,104, two-thirds of which will be covered by a federal research demonstration grant of $48,736 provided under Section 314 of the Housing Act of 1954. The city's share of the cost is $24,368, of which $20,510 was contributed by a foundation.

The project will have three phases: (1) an inventory to document existing information concerning such areas both in Chicago and in other cities; (2) an intensive study to analyze the physical economic and social aspects of the study area, and (3) final recommendations for the development of a multiagency program will be made to the Mayor and the City Council.

## *Off-street Spaces Hold Trade*

A SURVEY of the 18-block business district of Lafayette, Ind., showed 20,761 vehicles entering on an average day and 9,131 wanting to park. There were 1,141 parking spaces available, half along the curbs and the remainder in parking lots. The area would accommodate 5,556 vehicles on an average day, leaving 3,575 potential shoppers uncared for. The report demanded 750 off-street parking spaces.

The members of the street-parking committee of the Lafayette Chamber of Commerce formed Lafayette Parking Incorporated with the purpose to raise funds.

It sponsored a banquet for the merchants and property owners who set a goal of $100,000 to carry out the program. Nearly $50,000 was immediately subscribed for stock in the new corporation.

The six organizers signed an agreement denying themselves any profit from the operation. Only 12 shares of the stock subscribed carry voting power and the directors signed over voting rights to three trustees consisting of the mayor of the city, the secretary of the corporation, and the representative of the Chamber of Commerce.

The corporation buys or leases property for parking and subleases it to the city. Demolition costs are borne by the corporation; the city pays for leveling, paving, installing parking meters, and maintenance.

When the $100,000 working fund was in large part subscribed, the first lot was built for 30 cars. Two additional lots provide parking space for 52 cars and for 20 cars for a total of 102 parking spaces in the corporation's first year and a half of operation. The spaces are metered and rent for 5 cents for 90 minutes up to 25 cents for all day.

The lots are operated by the city. Half the revenue goes to Lafayette Parking, Incorporated until the meters are paid for, then all the revenue will be turned over to the corporation for additional parking lots.

The work of Lafayette Parking, Incorporated has had the unexpected effect of stimulating further public and private activity for increased parking space. Just beyond the central business area the city has provided two metered parking lots to accommodate 186 cars. These mainly serve downtown employees and all-day shoppers, who formerly occupied much of the available curb space. For those not wishing to pay, two city lots still further out provide free parking for 180 cars.

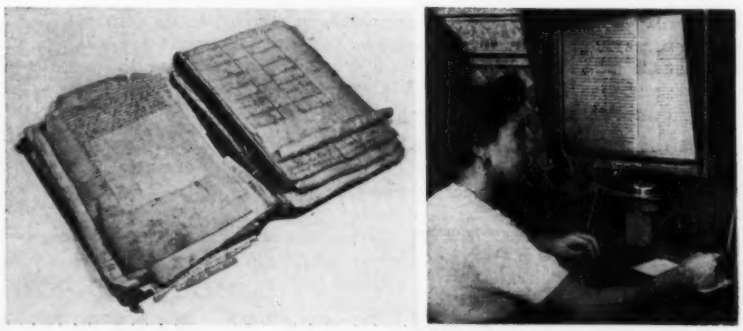
The city has also put a two-hour limit on meters in the main business areas, thus preventing monopoly of curb space by all-day feeding of these meters. The area is policed constantly, and Trafeteria boxes have been conveniently placed for violators to deposit their fines.

Supplementing the facilities provided by the city are four privately owned public lots that have been established within the central business area providing accommodations for 348 cars. Store-owned customer parking has increased from 288 spaces to 396.

At the time of the initial survey, only 50 off-street parking spaces were available to the public. Spearheaded by Lafayette Parking, Incorporated, public and private action has in less than two years provided 769 additional off-street parking spaces. This is 19 more than the 750 spaces recommended as the long-range goal in the original survey.

CARL L. HEYRDAHL
*Associate Professor of Government*
*Purdue University*
*Lafayette, Ind.*

## Now You See a Deed Walking



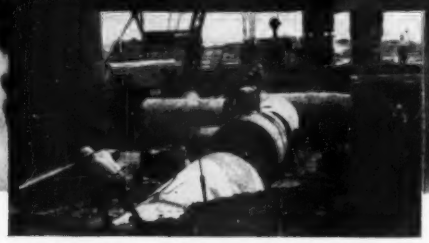
PHOTOGRAPHS COURTESY OF REMINGTON RAND

**At the left is a walking deed found in Deed Book H-2 of Philadelphia County, Pa., when the city microfilmed all its 36,000 deed and mortgage books. A walking deed meant that one took ownership to all property that one could walk around in one day. The microfilm of these deeds can be read with far greater ease than can many of the originals by means of microfilm readers, and duplicates can easily be made. In photograph at the right, a Remington Rand microfilm reader is being put to use.**

As the world's tallest and most forbidding mountain peaks have at last succumbed to the determination and initiative of man, so, many of the problems encountered in pipeline installations have been overcome by the versatility of Lock Joint Concrete Pressure Pipe.

Whether it must be installed in swampland, on steep grades, in a maze of underground city utilities or in the limited confines of a plant, Lock Joint Concrete Pressure Pipe can be laid bottle-tight, rapidly and with ease; and the trench can be backfilled immediately to avoid expensive ditch maintenance.

Once laid, its qualities of durability, trouble-free service and permanent high carrying capacity will eliminate the necessity of costly re-excavation for repairs, replacement or cleaning.



Installing 78-inch Lock Joint Prestressed Embedded Cylinder Pipe for cooling system of new Tidewater oil refinery.

36-inch Lock Joint Reinforced Concrete Cylinder Pipe was installed through Florida swampland.

**LOCK JOINT PIPE CO.**

**East Orange, New Jersey**

Sales Offices: Chicago, Ill. • Columbia, S. C. • Denver, Col. • Detroit, Mich. • Hartford, Conn. • Kansas City, Mo.

Pressure • Water • Sewer • **REINFORCED CONCRETE PIPE** • Culvert • Subaqueous

# Sewerage & Sewage Treatment

## Sewerage Construction Needs Estimated at $22 Billion Plus

CAPITAL investment of $14.1 billion to increase public sewerage facilities and $8 billion of expenditures to offset obsolescence will be needed over the next 20 years to provide for adequate service in collection and treatment of sewage for the expanding population of the United States, according to the Water and Sewerage Industry and Utilities Division of the Business and Defense Services Administration, U. S. Department of Commerce.

Present capital investment in public sewerage system facilities is estimated at $19.9 billion in the "Summary of Information on Public Sewerage Systems—Capital Investment Values," issued recently by the Division. The required capital outlays would increase this figure to $34 billion by the end of 1975.

Information collected by the Division from all available sources indicates that many inadequacies exist, particularly in sewage-treatment-plant facilities needed for present standards of treatment to abate stream pollution. To provide fully for adequate collection and treatment would require the estimated expenditure of $5.8 billion.

Further expenditure of $8.3 billion will be required over the 20-year period to expand these public sewerage facilities to the extent estimated to be sufficient to serve the population growth with its increased rate of water usage, and to maintain appropriate control of stream pollution.

The Division's estimates are based upon an increase in the population within the United States from the approximately 164,600,000 in 1955 to an expected 206,000,000 in 1975. Of the 1975 population, it is estimated that 163,000,000 will live in urban areas, compared with 126,000,000 in 1955. The population served by public sewerage systems in 1975 is expected to approximate 134,000,000, an increase of 34,000,000 over the estimated number of residents that are presently being served.

## Lagoon Design Dependent Upon Utilization of Effluent

THE utilization of sewage effluent from lagoon treatment systems has considerable effect on lagoon design. In a paper given at the 29th annual meeting of the Federation of Sewage and Industrial Wastes Associations, Professor Robert C. Merz, University of Southern California, reported on the "Investigation of Primary Lagoon Treatment at Mojave, Calif."

In most desert regions the plant effluent is reused for irrigation, cooling water, or other industrial uses. Consequently, the amount of water recovered is important. Under these conditions, deep lagoons with small areas are advantageous, for they afford less surface area for evaporation and less ground-contact area for percolation than do the large shallow lagoons. Another factor is the growth of plant life along the banks. Such plants are responsible for the utilization of considerable quantities of water.

W. W. Towne, public health engineer, United States Public Health Service, pointed out in his discussion that in the Dakota area, evaporation and percolation were important functions in helping get rid of the sewage effluent. Thus the lagoons in the Dakota area are usually shallow, covering considerable area.

Lagooning is quite popular in the Dakota area. Mr. Towne reported 42 lagoons in North Dakota, 32 in South Dakota, and 196 in the area.

The paper and discussion covered such topics as the effect of depth, intake location, wave action, and temperatures on the lagoon method of treatment.

## Steel-Framed Sheeting Solves Sewer Line Emergency

THE new 36-inch sewer interceptor, installed recently in Defiance, looked simple in the beginning. Since everyone knew that the town rested on an impervious layer of clay, the contractor had every reason to expect a dry, easily excavated trench, good pipe-laying conditions, and no trouble with the backfill. What neither he nor any one else knew, was that a vein of gravel reached across the interceptor line at one point and passed directly to the river. When the power shovels began excavating it, the trench quickly turned into something that resembled the Johnstown Flood. This wet, troublesome area extended for about 2,000 feet.

To install the sewer pipe through it, the contractor fabricated a movable-sheeting framework made of 3/16-inch steel welded to 6- and 8-inch I-beams. The sheeting was able to reach from the ground level to the bottom of the trench and was designed so that the pipe could be dropped down inside it.

A Northwest ¾-yard backhoe and an Osgood ⅜-yard crane first cut the trench to depth and to a width of about 6 feet; then they lowered the framework into the trench to provide a safe place for the men to do their work. A 2-inch air-driven pump powered by a Jaeger air compressor, lowered the water level in the trench to about 10 inches, so men with boots could work, even if not in complete comfort.

A Model 77 Hough Payloader then dumped a layer of gravel into the trench bottom for the men to spread at the proper elevation and provide a foundation for the pipe. A Badger crawler crane and the Osgood crane then laid the reinforced concrete pipe in the trench and the workmen caulked it with asbestos-asphalt compound, worked in by hand. The Hough Payloader then continued to backfill the trench with gravel, covering the pipe to about two-thirds of its diameter, and then completed the fill with earth.

This particular portion of the work progressed at a rate of 3 to 5 feet per day. The interceptor and other portions of the sewerage project were designed by Finkbeiner, Pettis and Strout of Toledo. The contractor was Bock and Knapp Construction Company.

# Citizen Groups: A Park Director's Best Friends

*Bloomington, Ind., playground is built by local trades union*

By J. T. FEMAL
*Director, Department of Recreation*
*Bloomington, Ind.*

AN increasing amount of citizen participation in government operations is said to be the modern trend in municipal affairs. Certainly the growing participation of civic organizations in helping to develop and then enlisting support for city-wide capital improvement programs is one evidence of this trend. So, too, is the federal government's insistence that civic groups participate in local slum clearance programs before localities can qualify for federal monetary help.

But despite the fact that citizen participation may have taken on a newly discovered importance to the municipal world as a whole, park and recreation officials are well-acquainted with this technique. For, as we well know, we have for many years needed and in some cases depended on local civic organizations to help us fulfill our local play area needs.

In Bloomington, Ind., we have recently completed a three-and-a-half-acre playground that probably wouldn't have been built for many years if a local organization—in this case, the Bloomington Building Trades—had not undertaken the job. Now what had formerly been a difficult-to-develop piece of waste land has been transformed into a splendid playground because a group of local citizens decided there was no task too hard to do once friends and neighbors got to work.

What were the ingredients of this successful city-citizen partnership? I'd say they were:

1. Good technical leadership and guidance from the city government—in this case our Bloomington Recreation Department.
2. An effective plan of development to show what was needed and how the job could be done.
3. Energetic salesmanship or advertising, if you will, to get across to the citizen groups the need for doing the job.
4. An able civic group willing to undertake an active part in the development of the playground.

### Development Technique

Here, in detail, is how the project developed. Several years ago, in casting about for playground sites that could provide play space in outlying neighborhoods, our recreation department came upon a three-and-a-half-acre city-owned plot located in the west-central portion of Bloomington. If developed, the site could serve an unmet need in the neighborhood involved. However, the site was a former quarry and, although partially filled in, it would require a great deal of work to put it into shape.

Plans were drawn up showing how the area might be developed. Since elevations on the site varied by as much as 27 feet, terracing was necessary to conserve as much usable play space as possible. The plan, therefore, called for a large general playfield area, an upper terrace with a shaded, small-children's area and a surfaced multiple use area. A small building for toilets a concession stand, and a storage area were designed to be located on the high north terrace overlooking the playfield.

Through the help of a draftsman from a local industry, a perspective drawing of the project was made and this sketch plus some enthusiastic salesmanship on the part of the Recreation Department helped convince the Bloomington Building Trades to undertake the development of the playground.

The union enlisted the help of many affiliated groups to get the project rolling. Cranes, bulldozers, trucks, power shovels, and thousands of yards of fill were obtained. A storm sewer was laid through the area for proper drainage. The work took several years to complete because it depended primarily on week-end labor, but it was finished in the summer of 1955 when the playground was opened and children and parents from the surrounding neighborhood came to use the much-needed area.

As Director of Recreation of Bloomington, my hat is off to the Bloomington Building Trades and the many fine civic groups in other municipalities who are daily helping to develop the park and recreation facilities of their communities.

# Uniforms for Los Angeles Parks and Recreation Department Personnel

FIELD personnel of the Los Angeles County Department of Parks and Recreation now wear distinctive new uniforms to identify themselves while on duty in the various park and recreation facilities throughout the county.

The new uniforms, worn both by male and female personnel, vary among employees of the recreation parks, aquatics, and golf course divisions.

Male recreation workers wear gray slacks, white shirts, navy blue poplin jackets, and navy blue baseball-type caps. Female recreation employees have gray wool skirts, white blouses, navy blue jackets, and navy blue hats. Their attire varies in seasons, with white or gray shorts for summer months or gray wool slacks in winter months. Park maintenance workers are identified by khaki uniforms with county insignia while golf course starters wear conservative sports attire.

The primary purpose of placing our department personnel in uniforms is that a greater degree of service may be rendered to the general public by being able to readily identify all department personnel.

NORMAN S. JOHNSON
*Los Angeles County Department of Parks and Recreation*
*Los Angeles, Calif.*

# GROWS AS YOUR TRAFFIC GROWS!

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All Type LF Controllers have provision for three dial-units regardless of the number of units originally purchased. They are available with 1, 2, or 3 resets on each dial-unit. When shipped from the factory, all controllers are wired for 3 resets. Resets 2 and 3 may be purchased originally or added at any time simply by installing dial contacts and switch arms.

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# *Street Cleaning & Snow Removal*

**City officials inspect the new Etnyre street flusher and Wayne sweeper.**

## Residential Streets Cleaned by Zones on Bimonthly Basis

SPRINGFIELD, Ill., has stepped up its street sanitation program by arranging for regularly scheduled street cleaning on every paved street once every two weeks. The cleaning program will extend from April 1 to November 1. The six miles of downtown streets will be swept and flushed six times each week, as they have been in the past.

To administer the program, Commissioner of Streets Owen J. Darling has divided the city into eight zones, excluding the business district, each covering approximately 15 street miles. Zone 1, for example, is cleaned on the first and third Monday of each month; Zone 5, the second and fourth Monday.

In the business district, the city has posted 500 reflectorized signs prohibiting parking daily from 2:00 a.m. to 5:00 a.m. in order to expedite street cleaning.

To implement the residential street-cleaning program, the city recently acquired a new Etnyre street flusher with a capacity of 3,000 gallons, mounted on an International Harvester cab-over-engine truck. The truck has dual rear axles to prevent excessive loads from being imposed on the city streets. With its large capacity, the flusher can operate from 15 to 25 minutes without refilling. It can flush a street 50 feet in width in a single pass. A pair of large sweepers follow the flusher to clean the gutter areas. One is a Wayne and the other, an Elgin. To pick up the piles of sweeper debris, the city has acquired a Fordson tractor with a front-end loader as well as a 2-ton International dump truck.

## Mix Salt with Calcium Chloride for Cold-Weather Ice Control

TO beat ice-control problems in severely cold weather, the best practice is to mix salt with calcium chloride in a ratio of 3:1. Calcium chloride works rapidly for the first 30 minutes, then appears to stop. However, it will do the same work in a half hour that salt does in over four hours. Salt, in contrast, starts more slowly, but continues to melt the ice over a 30-hour period. The *mixture* thaws rapidly at the beginning, then continues to melt he ice that is on the streets for approximately 20 hours.

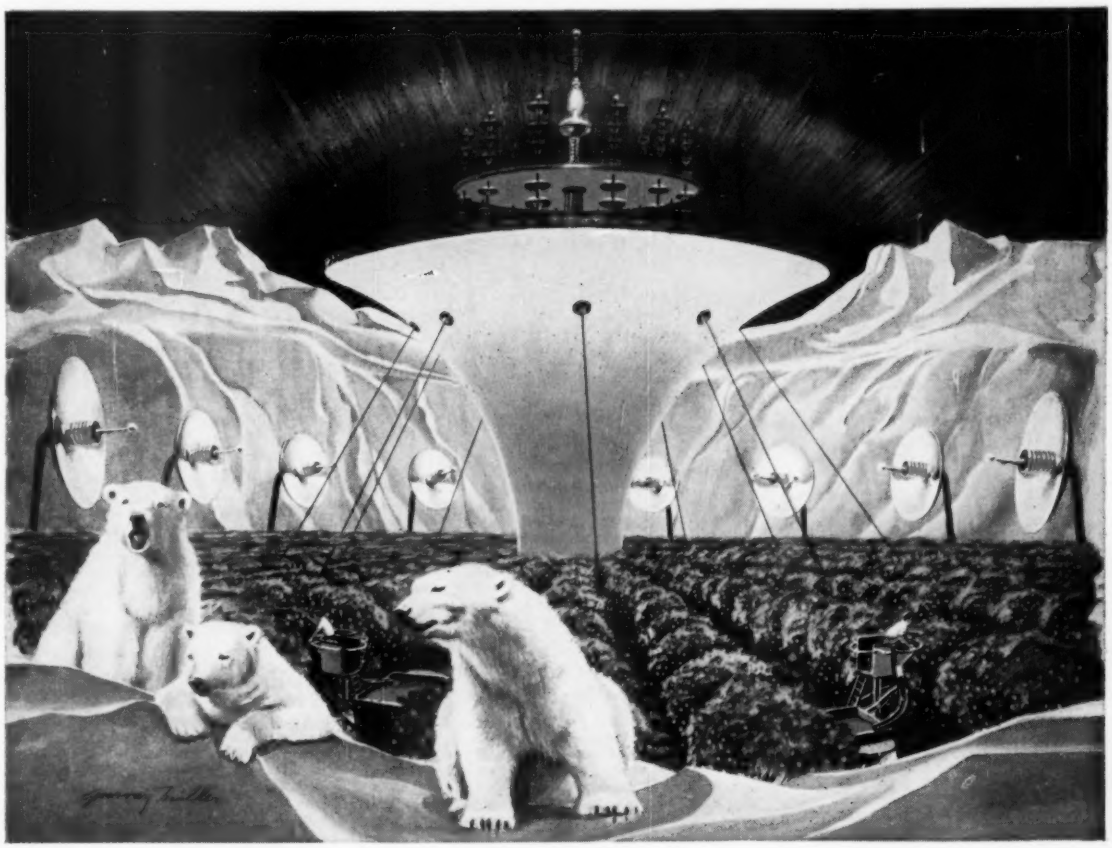
Tests confirming the effectiveness of the combination were first reported by the New Hampshire State Highway Department in 1939. George J. Maher, director of public works, Lewiston, Maine, has used the two in combination for several years.

The Lewiston crews start adding calcium chloride after the temperature drops to 25 degrees abovebero and increase the amount as the temperature decreases. They use straight calcium chloride at 5 to 10 degrees above-zero.

## Suggestions for Better Snow Removal

PROPER moldboard curvature and utilization of prevailing winds can reduce the amount of work connected with snow removal and can also have considerable affect on the cost. First of all, consider the moldboard. A plow equipped with a well-shaped moldboard and traveling at the correct speed will roll the snow and throw it a good distance off the highway. On the other hand, a plow with an improperly shaped moldboard will merely scrape the snow off the road and slide it off the rear edge of the plow, and will require more power to do a poor job.

Wind is another important factor. First, throw the snow with the wind, making the drift on one side of the road in a way that the snow ridge will continue to act as a snow fence. In this way the wind will blow the snow beyond the previously formed drift.



Huge solar engines imprisoning the heat of the sun may create islands of fertility in icy wastelands, thus vastly increasing the productive food areas of the earth.

***100 years from now...***

# WE MAY GROW ORANGES AT THE POLES!

What will the world be like generations from now? Wonderful new products and methods will make living easier, pleasanter, safer. But in this marvelous new era, one old friend will still serve efficiently. Water and gas will be carried by rugged cast iron pipe laid today. For more than seventy American water and gas utilities, cast iron mains over a century old are still serving dependably. And modern cast iron pipe ... centrifugally cast and quality controlled ... is far tougher and more durable.

U.S. Pipe is proud to be one of the leaders in a forward-looking industry whose service to the world is measured in centuries.

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# Informative Catalogs - Yours For The Asking!

*To obtain any of the following catalogs, write directly to the manufacturers or use the Post Card on the insert following Page 50*

### Uniform Fabrics

**475** Quality uniform fabrics for policemen, firemen and other city employees may be obtained from METCALF BROS. & CO., INC., 1450 BROADWAY, NEW YORK 18, N. Y. Metcalf fabrics are certified by the U. S. Testin Co. for color fastness, uniformity of shade, abrasion resistance and thread count. Details on request.

### Makes 180 Copies A Minute

**476** You can produce up to 180 copies a minute in 1 to 5 colors with the new A. B. Dick mimeograph machine. The Model 437 mimeographs on both sides of the paper without slip-sheeting. You can change from black to color ink or back, with no change of cylinder or rollers. Get full details from the A. B. DICK CO., 5700 TOUHY AVE., CHICAGO 31, ILL.

### Improved Fire Hydrant

**477** Designed to brave the sorriest weather conditions, the Mueller AWWA improved fire hydrant has a large bronze weather cap that keeps the operating nut from freezing; a dry-top design that keeps water away from threads and bearing surfaces; and "O" ring stem seals for a water-tight seal. These hydrants are easily repaired after traffic damage. For full details, write MUELLER CO., DECATUR, ILL.

### "Big City" Sewage Treatment for Small Communities

**478** A practical sewage plant for the small community is offered by the LAKESIDE ENGINEERING CORP., 222 W. ADAMS ST., CHICAGO 6, ILL. This self-contained plant places a Lakeside Spirafio clarifier over a digestion tank, combining the simplicity of an Imhoff tank with added flexibility and control. It is easy to operate and economical to maintain. Write for *Bulletin No.* 135.

### Street-Lighting Standards

**479** Constructed with fewer parts than ordinary street-lighting standards, the Millerbernd "Elite" is easier to install and less expensive to maintain. These standards are cold-roll-formed of extra-strength steel. They are described and illustrated in *Booklet OTA* from MILLERBERND MFG. CO., WINSTED, MINN.

### Cleans Sewers Faster

**480** FLEXIBLE INC. has introduced a new automatic dumper for installation on any Flexible power bucket sewer cleaning machine. The dumper is designed to speed cleaning operations and, at the same time, release a man for other work. For additional data, write the company at 3786 DURANGO AVE., LOS ANGELES 34, CALIF.

### Sidewalk Snow Blower

**481** Clearing snow-filled sidewalks and driveways is fast and easy when you're working with a Maxim Snow Thrower. These heavy-duty machines are available in three models, ranging from 4.6- to 8.2-hp units. They are fully described in a new bulletin from THE MAXIM SILENCER CO., 85 HOMESTEAD AVE., HARTFORD, CONN.

### Ends Brush Burning

**482** Time-consuming brush-burning operations are eliminated when park employees use an Asplundh Chipper. The unit quickly transforms four truck loads of brush into one truckload of chips, reducing loading and hauling costs. The chips may be used for mulching, shrub beds and erosion control. For a free booklet, *The Modern Approach to the Brush Problem*, write ASPLUNDH CHIPPER CO., 505 YORK RD., JENKINTOWN, PA.

### An Incinerator "Package"

**483** The Dravo incinerator is a complete package, including receiving pits, automatic refuse handling system, automatic combustion controls, traveling grate stoker, wet type gas scrubber, residue discharge conveyor and everything necessary for the economical operation of a municipal incinerator plant. For complete information, write DRAVO CORP., DRAVO BLDG., PITTSBURGH 22, PA.

### New Broom Cores for Rotary Sweepers

**484** Whether your city's street sweeper is a Rosco, a Little Giant, a Huber, or any other popular make, you can get a dependable broom core for it from the VAN BRUSH MFG. CO., INC., 327 SOUTHWEST BLVD., KANSAS CITY, MO. Van Brush broom cores are available without any filling or, if desired, will be furnished with palmyra-hickory or bass fibres, or with steel wires. Literature on request.

### Measures Traffic Speed by Radar

**485** *Bulletin R*-112 describes the Electro-Matic, a radar speed meter designed to measure the speed of vehicles scientifically. The meter is easily portable and requires only one man for operation. It can be set up in minutes, and operates on 6- or 12-volt battery or 120-volt A.C. Write AUTOMATIC SIGNAL DIV., EASTERN INDUSTRIES, INC., NORWALK, CONN.

### Low-Cost Bituminous Mix

**486** An economical way to produce bituminous mix for walks, parking areas and playgrounds, or to make repairs on busy streets, is to use a Kwik-Mix bituminous mixer. Where big daily tonnages are needed, a 10-cubic-foot mixer produces up to 22 tons of mix an hour, and a 14-cubic-foot mixer produces up to 30 tons per hour. Get full details from the KWIK-MIX CO., PORT WASHINGTON, WIS.

### Simplifies Concrete Repairs

**487** There are no rough, broken edges or irregular patches when you repair concrete pavement with a Felker concrete cutting machine and Felker Diamond blades. Felker machines are made in sizes ranging from 7½-hp to 36-hp for all jobs from patchwork to production cutting. Get full details from the FELKER MFG. CO., TORRANCE, CALIF.

### Non-Clog Well Screens—Guaranteed

**488** Anyone who operates a turbine-type well knows how important it is to have a strainer that won't be clogged by sand. To those with submersible-type pumps, this feature is even more important. A reliable, non-clog well strainer is offered by COOK WELL STRAINER CO., 6330 GLENWAY, CINCINNATI 11, OHIO. Complete specifications will be furnished on request.

### Loader and Backhoe

**489** Increase your tractor's usefulness on a variety of municipal applications with a Davis loader and a Davis backhoe, two versatile attachments available from MID-WESTERN INDUSTRIES, INC., 1009 SOUTH WEST ST., DEPT. A, WICHITA, KANS. The backhoe fits rigidly to the loader, yet, is easily uncoupled in minutes. It works at right angles, digging trenches up to 13 feet deep. Write for details.

### Installs Pipe Underground

**490** To install water and gas pipe under streets, pavement and freeways, without excessive trenching, use an efficient Hydrauger machine. A description of the complete new line of Hydrauger horizontal earth boring machines, along with interesting field operation photos, are included in a new 16-page booklet. For your copy, write HYDRAUGER CORP., LTD., 681 MARKET ST., SAN FRANCISCO, CALIF.

### Stops Leaks In Water Pipe

**491** A cement-mortar lining applied to the inside of water pipe, eliminates corrosion and tuberculation, increases flow capacity, reduces leakage, and cuts pumping costs. The cement-mortar lining of pipes in place is handled quickly and economically by CENTRILINE CORP. For descriptive literature, address the company at 140 CEDAR ST., NEW YORK 6, N. Y.

### Low-Cost Excavating and Loading

**492** If your city is interested in low-cost excavating and loading at its best, look into the advantages offered by a John Deere crawler-loader. The unit is built for fast, efficient operation and easy handling. Another John Deere special, the "420" utility tractor, features a loader and backhoe, and operates on only 1-gallon of fuel per hour. Write JOHN DEERE INDUSTRIAL DIVISION, DEPT. D49A, MOLINE, ILL.

### Fast Way to Locate Underground Valves

**493** Even when ground is covered with snow, ice or blacktop, this economical new device leads you directly to the valve box. The Aqua valve box locator is completely accurate, and eliminates "needle spinning." It offers top-view reading, and operates without wires, batteries or switches. Write AQUA SURVEY & INSTRUMENT CO., 2010 LESLIE AVE., CINCINNATI 12, OHIO.

***(Please turn to page 30 for more Bulletins)***

The 544 loads snow at 7-11 cu. yd. per min. Or loads coal or leaves . . . or converts to the lowest-cost way to load aggregate from stockpile to truck. A 15 m.p.h. road speed and a hydraulic truck trimming conveyor boost speed and efficiency on any job.

# Snow loaders that pay off all year 'round

Big snows are costly. Traffic gets jammed . . . fire trucks and police cars are blocked . . . business drops off. Time and money are lost.

But snow removal is costly. For most cities and towns it's too costly to maintain single-purpose snow removal equipment.

Barber-Greene multipurpose loaders solve this problem neatly and economically. As snow loaders, these machines have the high capacity and easy maneuverability to open up snowbound communities in a hurry. Between snow seasons, these versatile Barber-Greenes handle coal or easily convert to leaf and aggregate loaders to extend their efficiency to a year-round basis.

The 550 loads snow at 6 cu. yd. per min. As a windrow loader, its capacity is 4 cu. yd. per min., which keeps it ahead of all trucks normally available. Highly maneuverable, with a 10 m.p.h. road speed and a turning radius of only 8'6".

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# Which Catalogs Interest You?

***Write directly to the manufacturers, or use the Post Card on the insert following page 50***

### Better Street Lighting with Aluminum Standards

**494** Street-lighting standards constructed of light-weight aluminum are fast and easy to install, require minimum maintenance, and never need painting. Moreover, they retain their original strength and appearance under the most adverse weather conditions. Get full details in *Catalog HAL-754*, available free from HUBBARD ALUMINUM PRODUCTS CO., PITTSBURGH 1, PA.

### Easy-to-Erect Municipal Warehouse

**495** This colorful catalog of industrial and commercial buildings features rigid frame structures of 32 to 80 feet in bays 20 feet long, bow string truss buildings, and the recently developed Stran-Satin metal wall. The buildings are quickly and easily erected, and may be used as warehouses and other municipal installations. Write STRAN-STEEL CORP., DERTOIT 29, MICH.

### Jack-Mounted Flasher for Traffic Signals

**496** Now you can get efficient, long-lasting flasher operation in stop signs, loading zones, warning beacons, traffic islands, caution signals and detours, with a Time-O-Matic jack-mounted flasher. These flashers are designed with single or double circuits and with built-in eliminators. Get full details from TIME-O-MATIC, INC., P. O. BOX 850, 1108 BAHLS ST., DANVILLE, ILL.

### Blades for Cutting Concrete and Masonry

**497** Where diamond blades are used for cutting concrete and masonry, this new pamphlet should prove a helpful guide. It fully explains "black diamonds," "secondary abrasives," and such terms as "metal bonds," "grit sizes," "steel centers" and "diamond concentration." For your copy of *Pamphlet 1013*, write CLIPPER MFG. CO., SUITE 701, 2800 WARWICK, KANSAS CITY 8, MO.

### Pep Up Your Water Filter

**498** If you haven't yet tried the Palmer surface wash agitator, you certainly should get literature describing its many advantages. Convincing tests show the agitator requires about 40% less wash water, eliminates mud balls, and prevents the beds from cracking and shrinking. If you want better results from the filtering media itself, get a folder on Anthrafilt, said to double the length of filter runs. Write PALMER FILTER EQUIPMENT CO., P. O. BOX 1655, ERIE, PA.

### How to Install A Septic Tank System

**499** Where you may install a septic tank system in your community, and where you may not, are discussed in this engineer's manual on septic tank installation. The booklet includes sections on: Choosing the Best Location—Establishing the Proper Grade—Determining Size—Building the Tank—and Laying Out the Disposal Field. For your copy, write BROWN CO., DEPT. TB-12, SALES OFFICE: 150 CAUSEWAY ST., BOSTON 14, MASS.

### Tile Filter Bottoms

**500** For top performance in your city's water treatment plant, install Leopold filter bottoms. These efficient tile bottoms are designed to work better and last longer than ordinary units. Get full information from F. B. LEOPOLD CO., INC., 2413 W. CARSON ST., PITTSBURGH 4, PA.

### Aluminated Fence Needs Less Maintenance

**501** Newest addition to the line of fence offered by the Page Steel and Wire Division is chain-link fence of ACCO Aluminized fabric and ACCO Aluminized Albarb barbed wire. The protective aluminum coating, bonded to steel wire, will not wash away as it oxidizes, providing years of trouble-free service. Get full details in *Bulletin DH-16* from PAGE STEEL and WIRE DIV., AMERICAN CHAIN & CABLE CO., INC., MONESSEN, PA.

### A Coagulant for Water, Sewage Treatment

**502** A partially hydrated ferric sulfate for water and sewage treatment, Ferri-Floc, is safe and easy to handle, and may be stored in closed hoppers over long periods of time. With a few modifications, this free-flowing granular salt is easily fed through dry feed equipment. For a discussion of all phases of coagulation, get a new 38-page booklet from TENNESSEE CORP., 617-29 GRANT BLDG., ATLANTA, GA.

### Easy-to-Use Waste Receptacles

**503** The new Bennett catalog contains descriptions and illustrations of self-closing Waste receptacles with two individually silent closing doors; open "drop-in" models for all-around accessibility; and closed "drop-in" units with a chrome top. Also featured are paper towel and toilet tissue dispensers for public washrooms. For your copy, write THE BENNETT MFG. CO., ALDEN, N. Y.

### Traffic Signs

**504** A complete line of traffic warning signs, die embossed for longer wear, may be obtained from GRIMM STAMP & BADGE CO., 8105 ROSALLE, ST. LOUIS 17, MO. Both U. S. Standard and special wordings are available. An illustrated brochure of Grimco signs will be furnished on request.

### Why Pump Sand?

**505** A modern well screen, properly designed for your water well, plus a good driller with up-to-date tools and methods to do a job "developing" the well, will avoid this expensive trouble. For full facts on how Johnson well screens provide sand-free water economically, write EDWARD E. JOHNSON, INC., 315 N. PIERCE, ST. PAUL 4, MINN.

### Surveyor's Equipment

**506** City engineers and surveyors are offered a complete line of survey marking and identification equipment designed for low cost and dependability. For full facts, get *Bulletin No. 100-A*, from BATHEY MFG. CO., 100 S. MILL ST., PLYMOUTH, MICH.

### Efficient Tractor-Shovels

**507** Top performance on any digging, loading or hauling job is assured when you're working with a Hough "Payloader" tractor-shovel. This efficient machine gets more load in the bucket with less spillage, carries at higher speeds, and can maneuver faster than ordinary units. It is fully described in literature from THE FRANK G. HOUGH CO., 710 SUNNYSIDE AVE., LIBERTYVILLE, 7, ILL.

### New Seven-Pound Leak Detector

**508** Locating leaks in buried pipe and conduit is easy when you use the new transistorized M-Scope leak detector. Weighing only seven pounds, the unit operates without bulky batteries and tubes, using five tiny transistors. It features an easy-to-read meter, a built-in battery tester, and a leather case. For a free manual, *Special Pipe Finding and Leak Detecting Techniques*, write FISHER LABORATORY, INC., DEPT. A-2, PALO ALTO, CALIF.

### Efficient Motor Grader

**509** A torque converter drive and power-shift transmission featured on the Model T-600 Grade-O-Matic grader increase work production and simplify operation, assuring top performance on many city jobs. The big 140-hp unit weighs 30,420 pounds. It is fully described in *Catalog No. 415*, available from THE GALION IRON WORKS & MFG. CO., GALION, OHIO.

### Asphalt Pavement Lasts Longer

**510** Recommended for today's heavy traffic demands, asphalt pavement goes down quickly and at low cost, lasts longer, and is easy to maintain. The asphalt actually facilitates ice and snow removal, and remains unharmed by de-icing salts. For a smooth riding surface, get full information from THE ASPHALT INSTITUTE, ASPHALT INSTITUTE BLDG., COLLEGE PARK, MD.

### Protects Water Pipe

**511** Cities can use U. S. rubber expansion joints in water, sewage or power plants where pipe must be sufficiently tight and serviceable to withstand vibration without creating leaks. These joints soon pay for themselves by eliminating expensive maintenance and replacement. Once installed, they provide years of trouble-free service. Write UNITED STATES RUBBER CO., ROCKEFELLER CENTER, NEW YORK 20, N. Y.

### Collects More Refuse in Less Time

**512** A sure way to reduce refuse collection costs in your community is with a Hydro E-Z Pack body designed for efficient operation, faster collections, and "load-crushing" compaction. The greater refuse capacity of the Hydro E-Z Pak results in fewer trips to the dump. Large side-loading openings permit fast loading from both sides at once. For full information, write HYDRO E-Z PACK DIV., HERCULES GALION PRODUCTS, INC., GALION, OHIO.

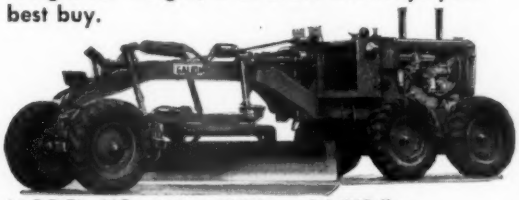
***(Please turn to page 32 for more Bulletins)***

# The Most Complete Line

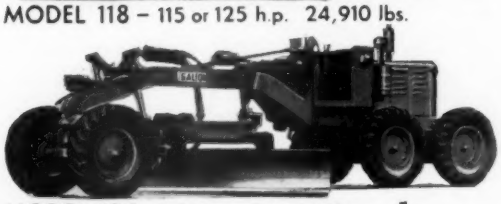
## 8 Models GALION MOTOR GRADERS

### *Most "PUSH-POWER" at the Blade*

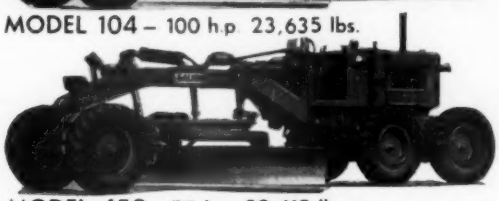
**Galion Graders give you correct balance of weight, power, and blade pressures to produce maximum "push-power" at the blade—where power means most in moving more material in quicker cycles with least operator fatigue. Weight for weight, a GALION is always your best buy.**



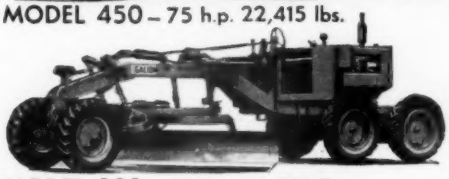
MODEL 118 – 115 or 125 h.p. 24,910 lbs.



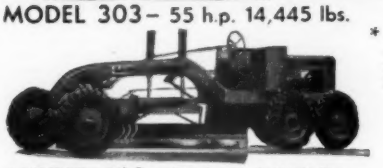
MODEL 104 – 100 h.p. 23,635 lbs.



MODEL 450 – 75 h.p. 22,415 lbs.

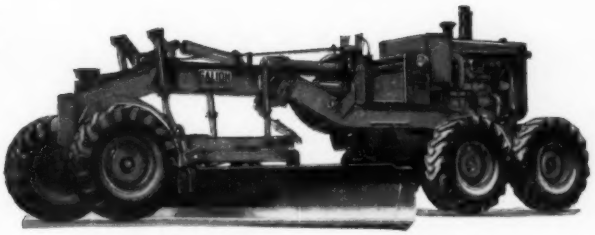


MODEL 303 – 55 h.p. 14,445 lbs.

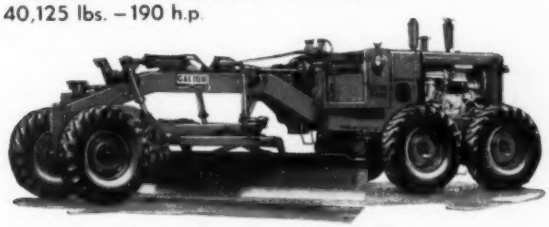


MODEL 503 – 50 h.p. 9,360 lbs.

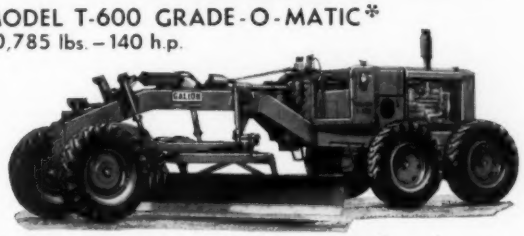
* Galion GRADE-O-MATIC Graders utilize a Torque Converter with tail shaft governor and Power-Shift Transmission.



MODEL T-700 GRADE-O-MATIC *
40,125 lbs. – 190 h.p.



MODEL T-600 GRADE-O-MATIC*
30,785 lbs. – 140 h.p.



MODEL T-500 GRADE-O-MATIC *
25,000 lbs. – 125 h.p.


BUILD A BETTER TOMORROW FOR A GREATER AMERICA
See you at the ROAD SHOW CHICAGO Jan. 28-Feb. 2, 1957


**IT'S "PUSH-POWER" AT THE BLADE THAT COUNTS!**

ESTABLISHED GALION 1907

MAIL THIS COUPON FOR COMPLETE INFORMATION

THE GALION IRON WORKS & MFG. CO.
GALION, OHIO, U. S. A.

**THE GALION IRON WORKS & MFG. COMPANY**
**Dept. A-126, Galion, Ohio, U.S.A.**
**Please send me literature on the Galion Motor Graders checked.**

- ☐ Model T-700
- ☐ Model T-600
- ☐ Model T-500
- ☐ Model 118
- ☐ Model 104
- ☐ Model 450
- ☐ Model 303
- ☐ Model 503

PERSON _____ TITLE _____

FIRM _____

STREET _____

CITY _____ STATE _____

# Which Catalogs Interest You?

***Write directly to the manufacturers, or use the Post Card on the insert following page 50***

### Keeps Winter Streets Ice Free

**513** Your truck driver is your entire crew when you use the new Seaman-Andwall Century spreader. The Century will handle salt, sand, calcium chloride, slag or any granular abrasive. Finger-tip hydraulic control in the cab governs width, direction and volume of spread. For *Bulletin SA-C-656*, write SEAMAN-ANDWELL CORP., DEPT. R-242, MILWAUKEE 1, WISC.

### Quickly Transports Men and Equipment

**514** Over the roughest terrain, through sand, soft earth or mud, in good weather or bad, the Universal 'Jeep' with the extra traction of its 4-wheel drive, takes work crews, tools and equipment wherever they are needed. The 'Jeep' is an ideal vehicle for hauling and towing, too. For detailed information on economical 'Jeep' trucks, write WILLYS MOTORS, INC., TOLEDO 1, OHIO.

### Low-Cost Power for Cities

**515** This 35-page bulletin on turbine generators covers units in the 1,500 to 15,000 kw range, and includes information on types and applications, turbine and generator construction, and testing and lubrication. For your copy of *Bulletin No. 1960C-P*, write WORTHINGTON CORP., ADVERTISING & SALES PROMOTION DEPT., HARRISON, N. J.

### Mercury Street Lighting

**516** Designed with a completely sealed optical system, the new OV-35 street-lighting luminaire keeps out bugs, dirt and moisture and, at the same time, provides the best possible night visibility. The new luminaire can be used with 400-watt J-H1 or 700-watt B-H18 fluorescent mercury lamps. It is fully described in literature from WESTINGHOUSE ELECTRIC CORP., LIGHTING DIV., EDGEWATER PARK, CLEVELAND, OHIO.

*N*

### New Aerial Ladder for Fire Trucks

**517** Installed on a commercial chassis, this low-cost aerial ladder will provide municipal fire departments with a fast, efficient way to fight fires. The 65-foot ladder is constructed of steel and is easy to operate. It is available from THE SEAGRAVE CORP., COLUMBUS, OHIO.

### Improved Water Treatment

**518** If you want to soften your water supply or simply clarify it to remove sediment, Contraflo is a system that will do that job for you economically. This is one of the upflow type sludge clarification systems offered by the GENERAL FILTER CO., AMES, IA. It is described in *Bulletin No.* 5131.

### Water and Sewage Pumps

**519** There are pumps in the Fairbanks-Morse line to move any magnitude of water at any appropriate pressure, and other pumps to meet ordinary or unusual problems of waste treatment and disposal. For help in selecting the right pump for your specific job, write FAIRBANKS, MORSE & CO., DEPT. AC-11, 600 S. MICHIGAN AVE., CHICAGO 5, ILL.

### 6 In 10 Want Electric Typwriters

**520** Six out of 10 office typists today prefer an electric typewriter to a standard machine, according to the UNDERWOOD CORP., ONE PARK AVE., NEW YORK, N. Y. The company is currently featuring its new line of "Golden Touch" electric typewriters with keyboard margin-setting, electric ribbon rewind, automatic carriage return, and half-moon keys. Write for details.

### Stop Water Hammer

**521** *Bulletin No.* 200 explains how to protect pipelines from the damaging effects of water hammer. Illustrated is a controlled closing air valve, Type CCAV, used to control the speed of line closure, vent air and, if necessary, discharge water. The valve will also admit air to protect against pipe collapse from line breaks. Write SIMPLEX VALVE & METER CO., Dept. AC-10, 7 E. ORANGE ST., LANCASTER, PA.

### Selecting Butterfly Valves

**522** Designed to help city engineers select the right type butterfly valve, understand its characteristics, and determine space requirements, this 40-page catalog contains pressure drop and flow tables, conversion tables, and theory and application data. For your copy of *Bulletin B-2*, write HENRY PRATT CO., 2222 S. HALSTED ST., CHICAGO 8, ILL.

### Longer Life for Sewage Digesters

**523** If your city is planning to build a new sewage treatment plant, take advantage of the economies that a PFT floating cover with metal-clad roofing can provide when used on your digestion tanks. These floating covers are said to lengthen the life of your digesters, step up operating efficiences, and eliminate your maintenance problems. Get full facts from PACIFIC FLUSH TANK CO., 4241 RAVENSWOOD AVE., CHICAGO 13, ILL.

### When Power Fails!

**524** You don't have to worry about power failures in your city's water or sewage treatment plants when you install Climax engine-driven generator sets. These sets are designed for instant starting, and are capable of supplying the necessary power to operate motor-driven pumps. They are fully described in literature from CLIMAX ENGINE AND PUMP MFG. CO., 208 S. LaSALLE ST., CHICAGO 4, ILL.

### Speeds Parking Meter Collections

**525** With the new MI-Co collection system there are no keys to turn, no coin receptacle to seal and unseal, and no misplaced coin door keys. The system is easily adapted to any MI-Co manual parking meter. Once installed, the coins simply drop through the collector unit into a locked coin cart. For additional data, write MI-CO PARKING METERS, P. O. BOX 668-A, COVINGTON, KY.

### Heavy-Duty Power for Police, Fire Boats

**526** Where dependability is needed in an outboard motor—for police, fire and emergency boat service—you can rely on a Johnson Sea-Horse. The new Johnson line for '57 features five Sea-Horses at 18 and 35 hp. All are designed for low-cost operation and stall-proof idling. For the new 1957 *Sea-Horse Catalog*, write JOHNSON MOTORS, 139 PERSHING RD., WAUKEGAN, ILL.

### Small-Size Trencher Big in Capacity

**527** Designed for digging trenches up to 26 inches wide and 10 feet deep, the Parsons 155 Trenchliner produces up to 25 feet of clean-cut trench per minute. The small-size trenching machine is easily operated under trees and other overhead obstructions, in narrow alleys and between buildings. It is fully described in literature from PARSONS CO., NEWTON, IA.

### High-Performance Portable Pump

**528** If you want to de-water trenches, manholes, sewers and other areas where sand and gravel may be encountered, you can rely on a Jaeger Model 2PN pump to do the job. This efficient unit is designed to pump all the water that can be pulled through a 2-inch suction line. It delivers 10,000 gph when operating at only 2,400 to 2,550 rpm. For *Catalog P-4*, write THE JAEGER MACHINE CO., 505 DUBLIN AVE., COLUMBUS 16, OHIO.

### Super Clean Air for Sewage Treatment

**529** Using the Ultra-filtration process, you can clean the air before you send it through diffuser plates and tubes in activated sludge plants; clean cooling air for electrical motor and generator rooms; and ventilate laboratories that require dust-free atmospheres. For full details on these specially adapted industrial cloth-filter-type dust collectors, get *Bulletin No. 557-D* from WHEELABRATOR CORP., 1350 S. BYRKIT ST., MISHAWAKA, IND.

### Two New Radio Receivers

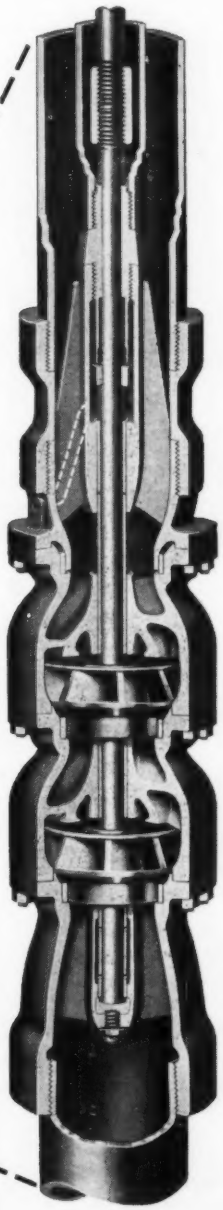
**530** Monitoradio announces what is said to be the first crystal-controlled fixed frequency receiver ever offered at a popular price. The unit has 3-mv sensitivity for 10-db signal-noise ratio. It has eight tubes plus rectifier, and operates on 110-120 volt, 60-cycle, AC only. Two models are available: MRC-10 for any single frequency on the 147-174 mc FM band, and MRC-33 for the 25-54 mc band. Write **MONITORADIO** DIV., I.D.E.A., INC., 7900 PENDLETON PIKE, INDIANAPOLIS 26, IND.

### Pole-Type Buildings Are Easy to Erect

**531** Cities interested in obtaining added space at minimum cost to store vehicles and for other uses, are offered new, easy-to-erect pole-type structures. They are described in a new booklet from THE DOW CHEMICAL CO., DEPT. PEN 3, MIDLAND, MICH.

***(Please turn to page 34 for more Bulletins)***

# Precision Built from Performance-Proven Design



The basic design of Layne vertical turbine pumps has been tried and proved under all kinds of operating conditions, both good and bad, the world over.

The finished pumps are produced by skilled craftsmen, in one manufacturing plant, using highest standards—Layne standards.

Industries, municipalities and agriculturalists can rely on the fact that it is prudent and safe to rely on Layne.

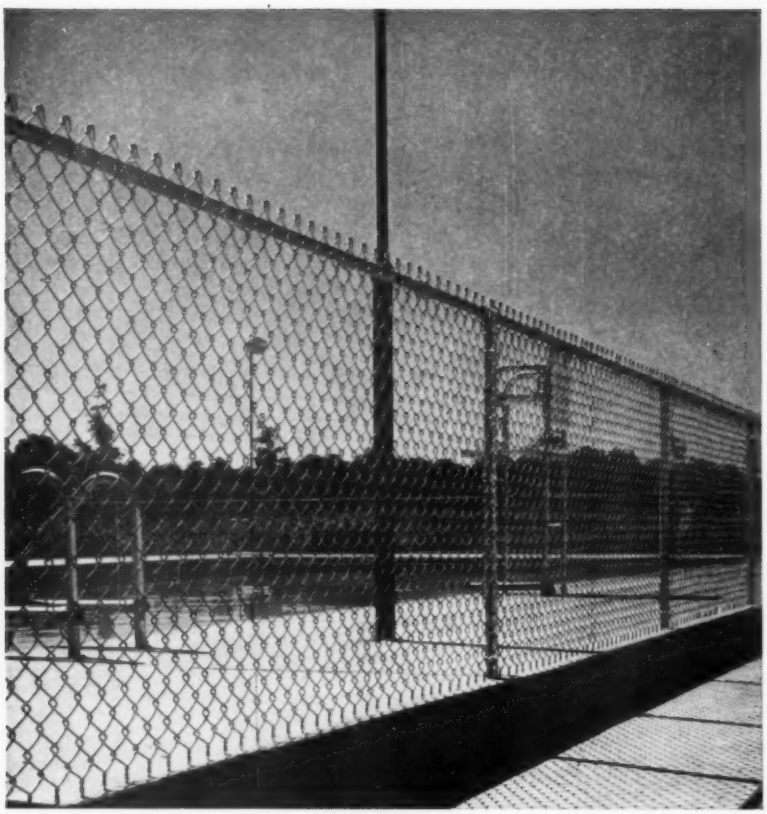
For example, consider Layne pump bowls—the very heart of a pump.—

- ★ Designed by top flight hydraulic engineers, the best available anywhere.
- ★ Heavy, rugged construction to give long service under gruelling conditions.
- ★ Clean, smooth flowing water passages in intermediates and hand-finished impellers for high operating efficiencies throughout long operating life.
- ★ Careful and continuous production control from design board to shipping crate—nothing left to chance.
- ★ Produced with the prime objective of pumping water at minimum operating cost—BETTER BUILT FOR BETTER SERVICE.

**LAYNE**
**& BOWLER, INC.**
**MEMPHIS**
General Offices and Factory

LAYNE ASSOCIATE COMPANIES THROUGHOUT THE WORLD

**Water Wells • Water Treatment**
**Vertical Turbine Pumps**



*An important point for you to consider*

## All-Aluminum Chain Link Fence costs less than rustable fence that has been painted once

From pools to playgrounds, from schools to golf courses—all-aluminum chain link fencing provides real savings, adds permanent beauty to enclosed areas.

**Aluminum lasts longer** because it is rustproof, resists corrosion—saves replacement costs. Aluminum never needs painting—a needless recurring expense.

**Brightens up enclosed areas.** Aluminum retains its bright new look for years and years. And—unlike rustable metal fencing—aluminum fence never looks "down-at-the-heels." Result: your city looks neat and clean.

Reynolds Metals Company does not make aluminum fencing. But Reynolds does supply quality aluminum to leading chain link fence manufacturers. Names will be furnished on request. *Reynolds Metals Company, P.O. Box 1800-NT, Louisville 1, Kentucky.*

Write for suggested specifications for All-Aluminum Chain Link Fencing.

**See "CIRCUS BOY," Reynolds new dramatic series, Sundays on NBC-TV.**

The Finest Products Made with Aluminum are made with REYNOLDS ALUMINUM

# *Catalogs for You*

***Write directly to the manufacturers or use Post Card at P. 50***

### Tractors and Attachments

**532** Use your Work Bull tractor to dig, doze, load, lift and handle scores of other municipal assignments. Some 20 power-matched attachments, quickly interchanged, keep the tractor busy all-year-round. Work Bulls are fully described in a new 24-page catalog available free from WORK BULLS, DIVISION OF MASSEY-HARRIS-FERGUSON, INC., 21-L QUALITY AVE., RACINE, WIS.

### Makes Water Analysis Photometrically

**533** Insure the efficiency of water analysis with a Klett Summerson electric photometer. This dependable device can be used for any determination in which color or turbidity can be ascertained in proportion to the substance to be determined. It is fully described in literature from the KLETT MFG. CO., 179 E. 87th ST., NEW YORK, N. Y.

### Water-Works Valves

**534** This complete line of water-works valves in sizes ranging from two to 48 inches includes non-rising stem and outside-screw-and-yoke units. These valves feature the hook-and-wedge type disc mechanism for easier, better and more positive valve operation. A wide variety of pipe connections are available. For a new *Valve Bulletin*, write THE KENNEDY VALVE MFG. CO., ELMIRA, N. Y.

### Low-Cost Power for Portable Tools

**535** Economical power for any street construction or maintenance job is yours with a Smith 75-P air compressor. The 75-P will operate one heavy-duty paving breaker, two medium duty paving breakers, or one 45-pound rock drill. It is operated by a Chrysler Industrial engine using three cylinders for power and three for compression. Write GORDON SMITH & CO., INC., 425 COLLEGE ST., BOWLING GREEN, KY.

### Water Meters

**536** A precise check on water usage is assured when you specify accurate Badger water meters. These meters are designed to reduce water waste, cut water plant power costs, and increase water department revenue. For complete data on the meters best suited to your community's needs, write BADGER METER MFG. CO., MILWAUKEE 45, WIS.

### Masks Sewage Odors

**537** Cities can effectively mask obnoxious malodors emanating from sewage systems, incinerators, dumps and industrial wastes with Alamask odor control chemicals, available from RHODIA, INC., 60 E. 56 ST., NEW YORK 22, N. Y. Write for literature.

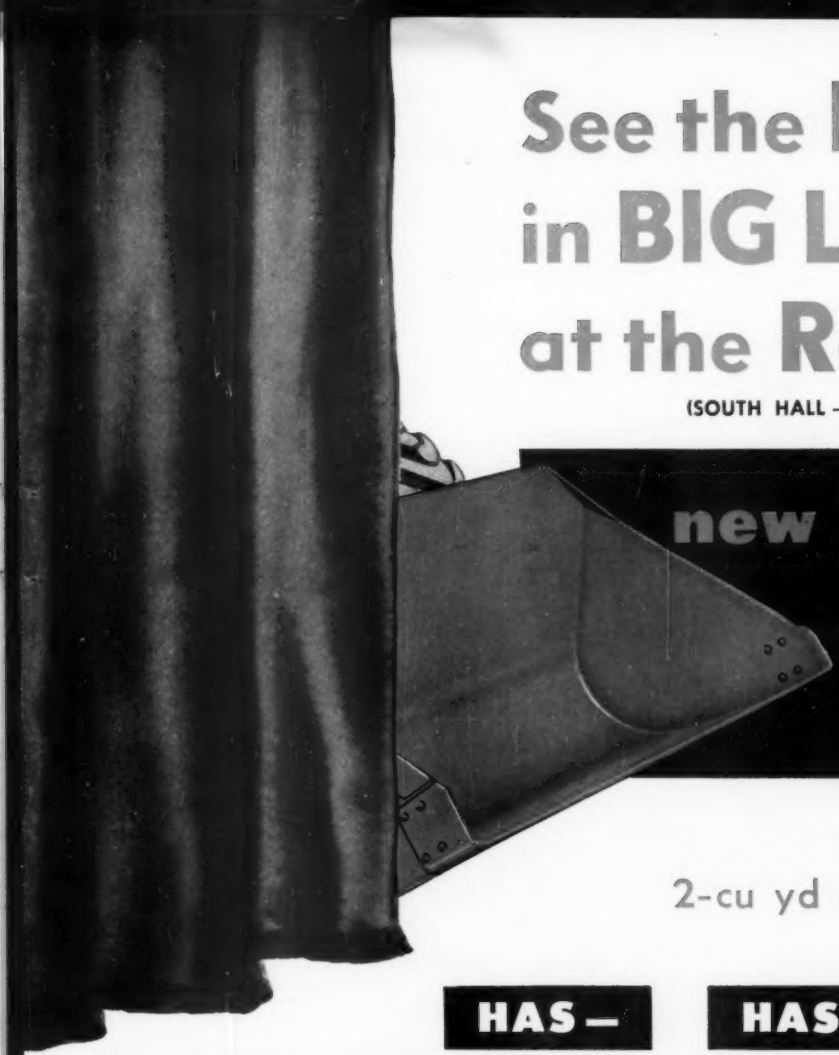
### Equipment for Police, Fire Departments

**538** Anything in the way of dependable equipment to outfit municipal police departments and fire departments may be obtained quickly and economically from W. S. DARLEY & CO., CHICAGO 12, ILL. Descriptive catalogs, fully illustrated, will be furnished on request.

***(See p. 38 for more Bulletins)***

# See the LATEST in BIG LOADERS at the Road Show

(SOUTH HALL — ALLIS-CHALMERS AREA)



## new TRACTOMOTIVE TL-20 TRACTO LOADER

20,000 lb
2-cu yd capacity • 95.5 hp

**HAS—**

**FULL POWER-SHIFT TRANSMISSION** that enables you to go from any forward to any reverse speed instantly. You quick-shift "on the fly" — no stop-and-go shifting.

**HAS—**

**HYDRAULIC TORQUE CONVERTER DRIVE** that multiplies torque 350 percent . . . provides the smoothest loading action you've ever seen in a wheel loader. No butting or ramming, no engine stalls.

**HAS—**

- High Traction Differential with Pin-Connected, PLANETARY AXLES
- Tip-Back Bucket
- Rear-Wheel Power Steering
- 4-Wheel Drive and 4-Wheel Power Brakes
- Full-Flow Oil Filter
- Screen and Magnetic Filters in Hydraulic System
- Lift and Dump Cylinders located well above ground and out of the way.
- One-Piece Welded Frame

Only Tractomotive brings you all these operating and service advantages. You PAY LESS . . . You GET MORE.

**TRACTO — a sure sign of modern design**

TRACTOMOTIVE EQUIPMENT
IS SOLD AND SERVICED BY YOUR ALLIS-CHALMERS CONSTRUCTION MACHINERY DEALER.

# TRACTOMOTIVE

TRACTOMOTIVE CORPORATION, DEERFIELD, ILLINOIS

# How many yards per hour?

## PAYLOADER® "more yardage" features

Balanced four-wheel-drive, torque-converter and exclusive power-transfer differentials give more effective traction on mud, gravel, ice and snow for more reliable crowding power. Coupled with this crowding power is the unusual pry-out action and 40° tip-back of the bucket at ground level to get full bucket loads with less spillage loss. The result is that a "PAYLOADER" can

**dig more**

The 40° tip-back of the bucket at ground level permits a carry position that is close and low for maximum stability and with bucket opening almost level to prevent spillage of heaped loads. Hydraulic system shock absorber cushions the loaded bucket while carrying, smooths the ride and allows higher carrying speeds with less spillage. These features enable a "PAYLOADER" to

**carry more**

It's the yards delivered that count on any job and that's where a "PAYLOADER" really pays off. It gets more load in the bucket with less spillage to begin with — it can carry at higher speeds with less spillage — it can maneuver faster because the power-shift transmission requires no stopping for ANY shift. All these advantages enable "PAYLOADER" tractor-shovels to

**deliver more**

# More yards on any job!

No one knows better than you that a rubber tired tractor-shovel can do so many jobs, under so many kinds of job conditions, that the yardage handled can vary considerably. That's why yardage figures can be so misleading unless all the factors are taken into consideration . . . kind of material . . . whether in-place or rehandling . . . operator efficiency . . . length of haul . . . waiting time for trucks . . . one location or scattered jobs, and many other variables that affect daily output.

But of this you can be certain . . . on any given job the new "PAYLOADER" tractor-shovels will deliver more yards per day than any comparable size tractor-shovel . . . and will do so continuously shift after shift.

The knowledge and experience gained in building thousands of tractor-shovels over the past 30 years is your assurance that a "PAYLOADER" is superior in design, engineering and performance . . . that it will outperform and outproduce any other comparable unit on any job.

So don't be deceived by "box-car" yardage figures . . . take a close look at the "PAYLOADER" . . . on *your* job . . . and you be the judge. Your "PAYLOADER" distributor will be happy to arrange a demonstration at your convenience.

**THE FRANK G. HOUGH CO.**
710 Sunnyside Ave., Libertyville, Ill

Send data on 4-wheel-drive "PAYLOADER" tractor-shovels as checked

- ☐ HO (2¼ yd. payload, 1¾ yd. struck)
- ☐ HH (1¾ yd. payload, 1-1/3 yd. struck)
- ☐ HU (1-1/3 yd. payload, 1 yd. struck)

Name_____
Title_____
Company_____
Street_____
City_____
State_____ 7

**PAYLOADER®**
MANUFACTURED BY
THE FRANK G. HOUGH CO. LIBERTYVILLE, ILL.
SUBSIDIARY—INTERNATIONAL HARVESTER COMPANY

**Verti-Line** *Submersible*

BOOSTER PUMPS

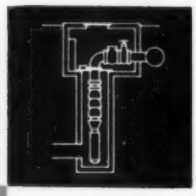
Layne & Bowler's half-a-century of experience in the design, engineering and manufacturing of vertical pumps, and the know-how of General Electric in the electric motor field *are now joined to produce the most advanced Submersible Booster Pumps made.* Sizes from 5 to 125 H.P.

*Why Submersible Boosters?*

For invisible, noiseless operation!
For safety—to people and equipment!
For dependability in any weather!
For maximum use of minimum space!
For maintenance-free performance, without adjustment or lubrication!

Some typical applications

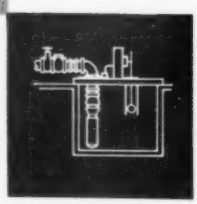
*pumping directly into distribution mains*



*fire protection*

*sump operation*

*cooling tower service*



Send today for new bulletin containing description of pump and motor features, material specifications, selection tables and application data. Ask for bulletin B-126.

*Verti-Line Pumps are the exclusive products of*
**LAYNE & BOWLER PUMP COMPANY**
***general offices and main plant***
**2943 VAIL AVENUE • LOS ANGELES 22, CALIFORNIA**


# *Catalogs for You*

***Write directly to the manufacturers or use Post Card at P. 50***

### Mechanically Stoked Refuse Incinerators

**539** For efficient incineration plus an end to a great many smog and air pollution problems, install a Nichols Monohearth refuse incinerator, combined with the Nichols Wetscrub fly ash and dust collection system. For complete information on these mechanically stoked refuse incinerators, write NICHOLS ENGINEERING & RESEARCH CORP., 70 PINE ST., NEW YORK 5, N. Y.

### Manual Parking Meters

**540** Maintenance problems are reduced to a minimum when you choose a Mark-Time manual parking meter installation. These meters are designed with a sealed mechanism that does not require weekly clockwinding; a "magic link" that saves damage to meter parts; and a sealed coin box for guaranteed collections. Write M. H. RHODES, INC., HARTFORD 6, CONN.

### Surveyor's Instrument

**541** The advantages of precision, speed, versatility and ease of operation have been combined in the Wild T-2 Universal Theodolite. With this dependable surveyor's instrument reading on both circles is direct to one second. Features include rapid optical plummet centering and a large field of view. Write WILD HEERBRUGG INSTRUMENTS, INC., MAIN at COVERT STS., PORT WASHINGTON, N. Y.

### Emergency Electric Plants

**542** Wherever an essential municipal service depends on uninterrupted electric light or power, you can depend on Onan emergency electric plants to keep the service functioning. Onan plants are available in capacities ranging from 500 to 75,000 watts. For all the facts, write D. W. ONAN & SONS, INC., 2566 UNIVERSITY AVE. S.E., MINNEAPOLIS 14, MINN.

### Microfilm Your City's Records

**543** Pressing a button on the Recordak Junior Microfilmer ends the tedious job of transcribing office records by hand. With the microfilmer you can shoot two rolls of film for extra protection. One set may be stored off the premises as a precaution against fire, flood or other disaster. For full information on microfilming and how it will save your city money, write RECORDAK CORP., DEPT. BB-11, 415 MADISON AVE., NEW YORK 17, N. Y.

### Controls and Meters Chlorine Gas

**544** Used in municipal water treatment plants, the Model HCVS Visible Flow Chlorinizer accurately controls and meters chlorine gas under vacuum in the dry, non-corrosive state, producing and delivering chlorine-water solution to the point of application. The Chlorinizer is easy to operate and economical to maintain, and is equipped with automatic safety devices. It is described in *Bulletin* 840-J8A from BUILDERS-PROVIDENCE, INC., DIVISION OF B-I-F INDUSTRIES, INC., PROVIDENCE 1, R. I.

***(See p. 40 for more Bulletins)***

# Stars in Stripes...

**HERE ARE TWO STAR PERFORMERS** especially designed to suit the marking requirements of towns and industries . . . the Wald Reflecto-Liner Model 8T and the Wald Reflecto-Liner, Jr. Both are equipped with Wald patented vertically adjusted shrouds, assuring uniformly crisp stripes . . . both spray single lines of traffic paint or reflective marking material . . . both have outboard spray guns that make it possible to mark parking lines right up to the curb or wall . . . both are easily maneuvered in close quarters . . . both can handle all the pavement marking needs of smaller communities and industries to stripe parking stalls, aisles, crosswalks and center lines . . . and both are engineered for efficient low-cost striping.

**Reflecto-Liner Model 8T**
Self-propelled with over-center traction for uniform drive, sprays 2 to 6 inch stripes at 3 mph.

**Reflecto-Liner, Jr.**
Hand-propelled, this narrow, nimble machine sprays stripes 2 to 4 inches wide at walking speed

**The Wald Model 8T and Reflecto-Liner, Jr. are just two of the striping machines in the complete Wald line. For full information about Wald Truck-O-Liners, Reflecto-Liners, Carry-Liners and accessories, write for illustrated catalog W-56.**

## WALD INDUSTRIES, INC.

HUNTINGDON
PENNSYLVANIA

# INSTANT BRUSH DISPOSAL
# FITCHBURG CHIPPER
## DOES 3 MEN'S WORK

Charles Morriss feeds roadside brush into Mahwah's Fitchburg Chipper.

When you want to cut brush disposal cost, investigate a Fitchburg Chipper, a real time and labor-saver.

John Glasgow, Superintendent of Public Works, Township of Mahwah, New Jersey, says: "Now I chip brush instead of putting it on piles and waiting for wet weather to burn. I mention wet weather because of fire hazard.

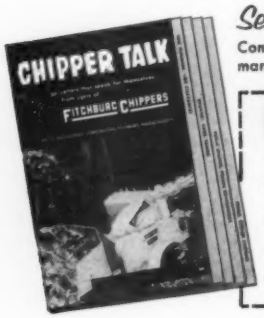
"The Fitchburg Chipper was purchased in May 1954. It will take only a short time to pay for itself. I hired 6 men to cut and clean up brush, now with the Chipper I only need 3 to do the same work."

You, too, can save man hours where there is a need for line clearance operations, road clearance, thinning out woodlots, or handling the brush problem on parkways, city streets, etc.

The Fitchburg Chipper is designed for rugged use, and in models priced from $960 upward.

Learn about Fitchburg's exclusive spring-activated feed plate, which makes chipping of all sizes of wood (up to the machine's rated capacity) simple. Another exclusive feature is the hinged feed apron which can be closed when not in operation.

Read how others cut labor costs with a Fitchburg Chipper—the only chipper that gives you a one-year guarantee.




*Send For New Free Booklet*—"CHIPPER TALK"

Complete cutaway color drawings and photo copies of letters from many municipalities, commissions, counties, contractors, tree care men.

FITCHBURG ENGINEERING CORPORATION

Department AC-126, Fitchburg, Massachusetts

Send my free copy of "*Chipper Talk*" to:

Name_____ Position_____

Address_____

Town or City_____ State_____


# *Catalogs for You*

***Write directly to the manufacturers or use Post Card at P. 50***

### Is Your Reservoir Leaking?

**545** Is the concrete in your sewage treatment plant suffering under the hammering blows of Messrs. Wear and Tear, with destructive assists from Old Man Weather? A practical answer to this problem of concrete deterioration is provided by economical Gunite. This versatile repair material is fully described in a new, 48-page brochure from PRESSURE CONCRETE CO., 315 S. COURT ST., FLORENCE, ALA.

### Loading, Hauling, Excavating

**546** Here is an efficient front-end loader that is effective not only for sanitary landfill work, but for loading, hauling and excavating operations as well. The 3-yard International-Drott TD-18 can be used as a skid-shovel, a clamshell, a bull-clam, and a big-capacity bulldozer. It is fully described in literature from DROTT MFG. CORP., MILWAUKEE 15, WIS.

### Improved Fire Fighters

**547** A new look in fire engines emerges with the efficient American LaFrance 800 Series. The chassis has been designed with a heavier frame, longer springs and direct-acting shock absorbers. The body, 73 inches wide, provides greater hose capacity; seven enclosed compartments and two open furnish adequate protection for all equipment. Write AMERICAN LaFRANCE CORP., ELMIRA, N. Y.

### Cleaner Swimming Pools at Less Cost

**548** The water in public swimming pools can be kept safe and clean, without costly equipment, with a Belco purification system. Belco installations are designed to permit continuous use of the pool without periodic draining and refilling. For a technical description of both pressure filters and diatomaceous earth filters, write BELCO INDUSTRIAL EQUIPMENT DIV., BOGUE ELECTRIC MFG. CO., 52 IOWA AVE., PATERSON 3, N. J.

### Hydraulic Rescue Kit for Traffic Emergencies

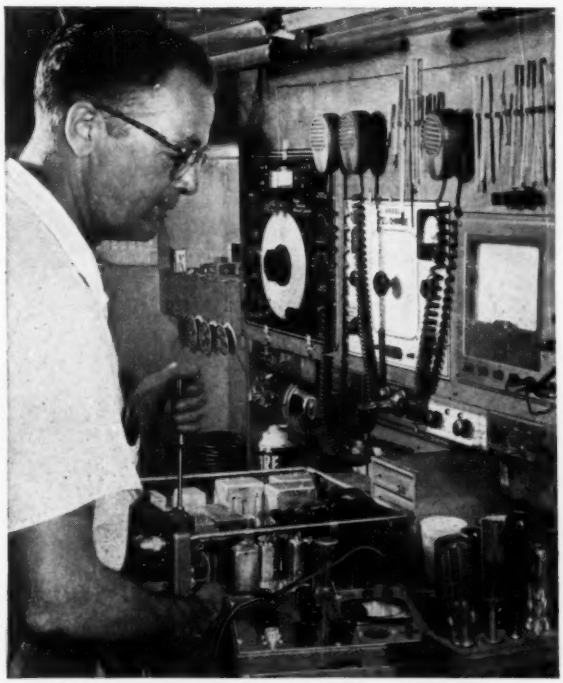
**549** How the P-F hydraulic rescue kit uses 7½ tons of hydraulic power to free trapped victims faster and easier, is explained in a new bulletin from H. K. PORTER, INC., SOMERVILLE 43, MASS. The kit includes a 7½-ton remote-control jack and all-position ram, Speedlok tubing and efficient attachments. It is designed to handle all rescue situations.

### New Vibrating Roller

**550** It's easy to maintain city streets and roads when you're working with a Model VR 28 W vibrating roller. This lightweight tool will move into the tightest spots, compacting subbase to meet the most difficult specifications. On asphaltic paving materials, it exceeds the compaction of any 5-ton dead weight roller. Write ESSICK MFG. CO., 1950 SANTA FE AVE., LOS ANGELES, CALIF.

***(See p. 44 for more Bulletins)***

**TYPICAL GENERAL ELECTRIC AUTHORIZED SERVICE STATION** is Lane's 2-Way Radio Service in New London, Conn. Owner Al Lane has been in electronics service for over 30 years—now provides maintenance for more than 200 customers' mobile units.



**MOBILE TWO-WAY RADIO SERVICE SHOP,** completely equipped, that Lane uses for fast, efficient servicing on two-way systems. Lane's preventive maintenance program includes monthly checks on all mobile and base station units—of all makes.

# KEEP TWO-WAY RADIO SYSTEMS AT TOP EFFICIENCY WITH GENERAL ELECTRIC AUTHORIZED SERVICE

**General Electric Authorized Service Stations are independent local businessmen, factory-trained to maintain your two-way radio system's full-time operating efficiency at the lowest possible cost.**

Whether you now operate a two-way radio system, or are contemplating the installation of one, it will pay you to investigate the prompt, thorough and economical servicing programs offered by more than 500 General Electric Authorized Service Stations throughout the nation.

Like any investment, a communications system requires planned management to yield a satisfactory return. Such return on your two-way radio system requires planned *maintenance*. General Electric's Authorized Service Stations use experts, factory-trained to provide service that protects your investment by preventing loss of communication.

*Licensed Experts.* To be franchised as a General Electric Authorized Service Station, an independent operator must be fully licensed by the Federal Communications Commission to perform checks and maintenance on radio communication equipment. He must have the highest reputation in the community for fair dealing and good workmanship, and must carry adequate stocks of factory parts to assure quick repairs in emergencies.

2-WAY MOBILE RADIO

Once franchised, General Electric Authorized Service Stations are enrolled in a continuing program of service training. In addition to factory-training sessions, all stations are regularly supplied with latest maintenance instruction manuals, bulletins, and hints on servicing all makes of two-way radio equipment. Also, General Electric employs highly skilled Communications Engineers in major cities, experts who are immediately available to any independent Authorized Service Station, or customer, for consultation on any communication problem.

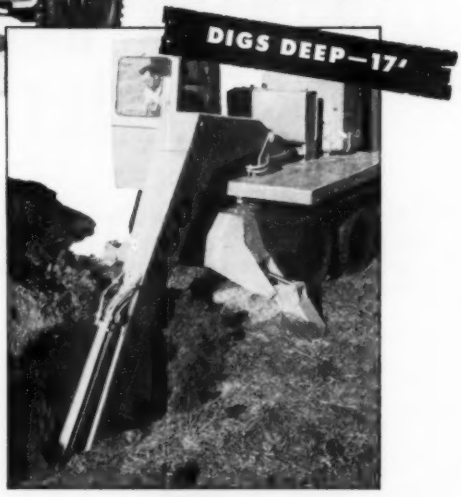
**FOR SALES AND SERVICE** see "Radio Communication Equipment" in your Yellow Pages. Or, write: *General Electric Co., Communication Equipment, Section X10126, Electronics Park, Syracuse, N. Y.* In Canada, write: *C.G.E. Electronics, 181 Lansdowne Avenue, Toronto.*

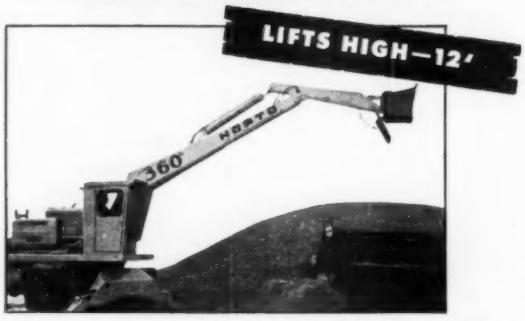
*Progress Is Our Most Important Product*

GENERAL ELECTRIC

# NEW 360 HALF-YARD HOPTO

## DIGGER • SHOVEL • CRANE




**H**ere's the completely hydraulic *mobile* shovel that equips you to do more jobs with lower equipment investment . . . *at greater profit!*

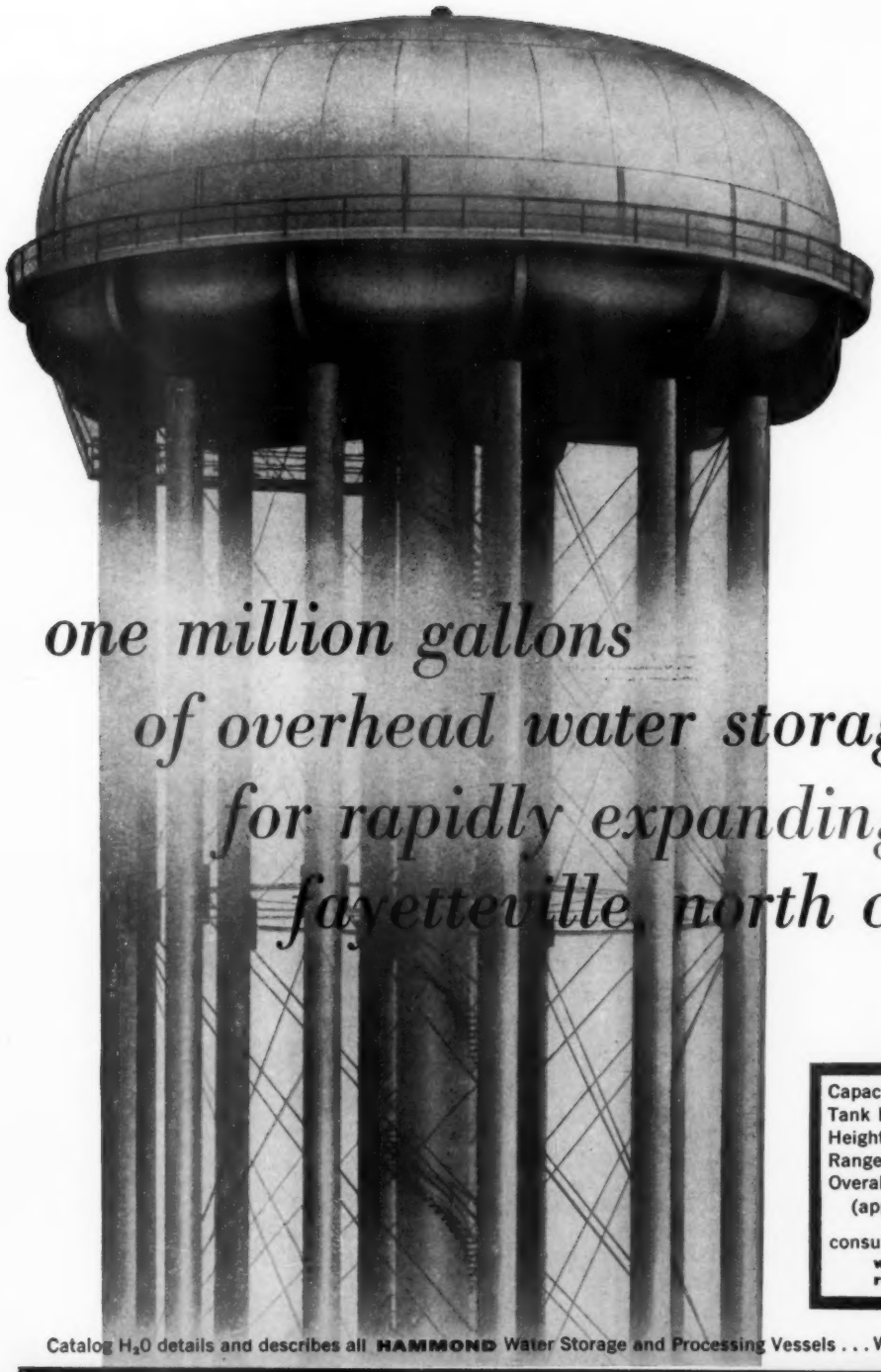
The 360 HOPTO swings three hundred and sixty degrees from its over-the-cab travel position. Operator's cab swings with unit for face-forward, *safe* operation. Feather-touch controls actuate every movement from positioning of outriggers to fast-cycling swing and 180° tilt of bucket! Heavy-duty hydraulic system with built-in relief valves gives an easily managed, oil-cushioned, 20 ton force to dipper stick!!!

Interchangeable backhoes and shovel buckets have H and L replaceable teeth and are available in three-eighths and one-half yard sizes. Check *NOW* on the many advantages of owning this work-hungry, mobile digger, shovel, crane!

***Write today for complete information on the '360' or any one of six quarter-yard HOPTO Models!***

**BADGER MACHINE CO.**

DEPT. D • WINONA, MINNESOTA



*one million gallons*
*of overhead water storage*
*for rapidly expanding*
*fayetteville, north carolina*

| | |
|---|---|
| Capacity | 1,000,000 Gal. |
| Tank Diameter | 86 Feet |
| Height of Columns | 111 Feet |
| Range of Head | 25 Feet |
| Overall Height (approx.) | 146 Feet |

consulting engineer
**wm. c. olsen & assoc.**
**raleigh, north carolina**

Catalog $H_2O$ details and describes all **HAMMOND** Water Storage and Processing Vessels . . . Write for your copy.

**HAMMOND IRON WORKS**

WARREN and BRISTOL, PA. • PROVO, UTAH • CASPER, WYO. • BIRMINGHAM, ALA.

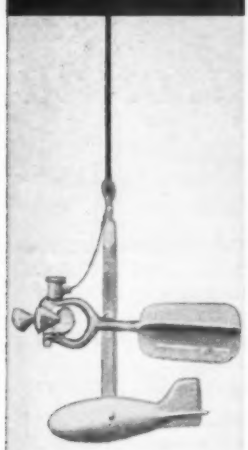
**GURLEY** INSTRUMENTS FOR POLLUTION CONTROL

**Now—Record Wind Velocity in Any of Three Units**

The Gurley Universal Anemometer reads wind velocity—important factor in controlling air contamination—in kilometers per hour; miles per hour; or knots. The three units can be used interchangeably. A simple switch over a calibrator changes the instrument's method of recording from one speed unit to another. The indicator pointer instantly adjusts to the correct reading for the unit selected. The Gurley DC Anemometer is wind-powered...requires no outside power to indicate and record velocity. Accurate within 2% at velocities from about 2 to 100 miles per hour, it is frequently used to control other equipment.

Gurley Anemometers are in wide use at municipal and industrial pollution control laboratories, airports, weather stations, oil refineries, in homes and at shore installations. Other Gurley Wind Instruments for pollution control stations include: Wind Direction Instruments, Wind Velocity and Direction Recorders and Pilot Balloon Theodolites. *Write for Bulletin 6000.*

**GURLEY**

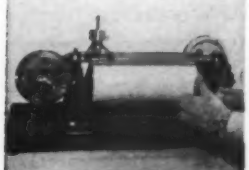


**Current Meters, Water Level Recorders Reveal Water Conditions**

The study of flow and level of water are two basic steps in controlling pollution of streams and other waters. The basic flow measuring instrument is the Gurley Current Meter, in use in federal, state and municipal bureaus for 70 years. Gurley Current Meters are available in a variety of outfits for use by overhead-cable suspension...wading-rod suspension...exploration and survey parties. Gurley's "Price Pattern" instruments can be supplied in either fresh or salt water models. There is also the "Pygmy" for shallow streams, flumes and canals.

Gurley Water Level Recorders make continuous graphic records for an entire day or week. Float-operated, simple in construction and operation, they are widely used in reservoirs, sewers, sewage disposal and hydro-electric plants, and supplement irrigation and stream gaging measurements. For details on these and many other Gurley Hydraulic Engineering Instruments, write for *Bulletin 700.*

Other Gurley Instruments to aid you in pollution studies include: Densometers for measuring porosity, air-permeability and air resistance of samples; Permeometers for measuring air flow through samples. *Write for further information.*



**GURLEY**

**W. & L. E. GURLEY, 527 Fulton Street, Troy, New York**
*Instrument Makers Since 1845*


# *Catalogs for You*

***Write directly to the manufacturers or use Post Card at P. 50***

### Rubber Cones Guide Traffic Safely

**551** A sure, easy way to guide traffic safely through dangerous intersections and around street repair sites is with rubber Safe-T-Cones made by the RADIATOR SPECIALTY CO., CHARLOTTE, N. C. Safe-T-Cones are offered painted or reflectorized in 12-, 18- and 28-inch sizes. Also available are special signs, flashers and flag adapters.

### Protects Pipe, Culverts, Tanks

**552** For complete protection of concrete sewer pipe, culverts, acid vats, sewage treatment tanks and laboratory walls and floors, specify Amvit clay liner plates. Easy-to-install, Amvit plates are designed to resist acids, alkalies and chemical reaction. They are available from AMERICAN VITRIFIED PRODUCTS CO., NATIONAL CITY BANK BLDG., CLEVELAND, OHIO.

### Keeps City Streets Ice Free

**553** Applied directly to icy streets, Columbia High Test Flake calcium chloride, melts the ice quickly and permits it to be easily bladed off the street. The new High Test Flakes are said to contain 20% more calcium chloride than ordinary flakes, and are packaged in easy-to-handle 80-pound bags. Get full details from COLUMBIA-SOUTHERN CHEMICAL CORP., ONE-GATEWAY CENTER, PITTSBURGH 22, PA.

### Dependable Parking Meters

**554** Whether your city is concerned with on-street or off-street parking problems, Dual parking meters will provide a quick, economical solution. Dubl-Duals (two meters on one stand) offer low installation costs and minimum maintenance. Combined with a few Single Duals, they will meet any spacing requirement. Write THE DUAL PARKING METER CO., CANTON 2, OHIO.

### Efficient Grass Cutter

**555** Big, bicycle-type wheels on the Yazoo mower provide smooth, easy maneuverability and enable the unit to cut high grass in a jiffy. The mower is built for longer service with less maintenance. It is fully described in a new catalog from YAZOO MFG. CO., BOX 4527, 3607 LIVINGSTON RD., JACKSON, MISS.

### Steel Water Pipe

**556** To assure sturdy, safe, leak-proof water supply lines, specify tar-enameled steel pipe. Every length of this steel water pipe is hydrostatically tested in the shop. It is easy to install, and economical to maintain. Write BETHLEHEM STEEL CO., BETHLEHEM, PA.

### Fire Service Water Meters

**557** Cities using Hersey Detector fire service meters are assured of getting accurate records of the amount of water used through combination industrial and fire service lines. This meter is equipped with a bronze case compound meter on its by-pass. It is available from the HERSEY MFG. CO., SOUTH BOSTON, MASS.

***(See p. 46 for more Bulletins)***

# They choose TYLOX Flexible PIPE JOINTS

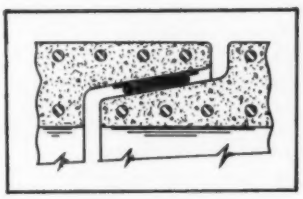
**to assure**

## LEAK-PROOF, CORROSION-RESISTANT PIPE LINES

Thousands of Dublin citizens view this TYLOX-Jointed concrete pipe as it passes in review during a St. Patrick's Day Industrial Parade. Manufactured by Moracrete, Ltd., of Dublin, it is part of 53,000 feet of similar pipe required for the $6,000,000 North Dublin Drainage Scheme.

In designing the system, engineers knew that no ordinary pipe joint could last for long under the tough conditions involved. Its location along the coast meant the line would be subject to severe VIBRATION, SHEAR stress and CORROSION. In fact, there was only *one* pipe joint the engineers felt safe in specifying . . . TYLOX Rubber Joints.

TYLOX-Jointed pipe lines are giving trouble-free service under "tough" conditions, all over the world. That's why more and more waste disposal authorities are specifying "TYLOX" for their projects. Like the Dublin officials, they want to make sure their pipe joints are safe from failure, *whatever* the conditions.



*Non-corrodable TYLOX Joints seal water-tight by compression, and outlast the pipe itself.*

6010

**WRITE FOR** our new 20-page booklet "Joint Enterprise." Read the facts on TYLOX — and the case histories supporting the facts — and specify TYLOX Rubber Joints on *your* next pipe job.

**HAMILTON KENT**
**MANUFACTURING COMPANY**
KENT, OHIO
427 West Grant St. Orchard 3-9555

# how to CUT CORROSION LOSSES

## a report by Koppers Company, Inc.

James Beaumont
Project Leader

How thick should a protective coating on above ground installations be? This is a question that is asked of our Technical Department quite often.

* * *

All other factors being equal, the thicker the protective coating, the longer its service life. Basically, the coating thickness required is dictated by the degree of protection desired and the conditions under which the coating system must perform. Specifically, you need to know the following things about each job: (1) What is the corrosive environment . . . mild? . . . severe? . . . acid? . . . saline? (2) How long must the coating last? . . . is it practical to re-coat every year or are thicker, longer-lasting coatings desirable? (3) The roughness of the surface: since valley-to-peak distance may be as great as 8 to 10 mils, it is vital that peaks be fully covered to the specified thickness. (4) Finally, you should figure the cost of "down time" in terms of lost production.

Another factor in determining coating thickness is the accessibility of the structure. Our pre-coating surveys always include a careful analysis of inaccessible areas where a thicker coating is recommended simply to eliminate for as long as possible the need to re-coat the hard-to-get-at places. This reduces yearly costs by lessening chances of corrosion in places that are passed-by in routine inspections or that are inaccessible.

* * *

The "Steel Structures Painting Manual" (Vol. 1) points out that average industrial conditions warrant a 5-mil coating and severe corrosive conditions need a coating that *must* exceed 10 mils. Generally, our applications research corroborates these recommendations.

It should be remembered that the inherent characteristics of coating materials determine the maximum thickness to which they may be applied in a single coat. For example, some cold-applied coatings of coal-tar base give, in a single coat, a film up to eight times the thickness of ordinary paints. Coal-tar enamels, widely used for pipeline applications, can be applied much more heavily, normal thickness being between 60 and 100 mils. Of course these heavier single-coat thicknesses mean reduced application time and labor costs as well as longer life.

* * *

Every attempt should be made to "police" the application to make sure that the desired thickness is obtained. Checks on wet or dry film thickness can be made with mechanical, electrical or magnetic gauges designed for the purpose.

* * *

If you have specific problems on protective coating thickness . . . or any corrosion-control problems . . . we'd be glad to hear from you. Write to Koppers Company, Inc., Dept. 103M, 1301 Koppers Building, Pittsburgh, Pa. District Offices: Boston, Chicago, Los Angeles, New York, Pittsburgh and Woodward, Ala. In Canada: Koppers Products, Ltd., Toronto, Ontario and Edmonton, Alberta.

KOPPERS

BITUMASTIC
REG. U. S. PAT. OFF.
COATINGS AND ENAMELS

# *Catalogs for You*

***Write directly to the manufacturers or use Post Card at P. 50***

### Cleans Sewers

**558** Sewer cleaning is turned into a fast, easy, economical operation with the Sewerking, an effective power cable-rodder made by the O'BRIEN MFG. CO., 5662 NORTHWEST HIGHWAY, CHICAGO 30, ILL. A continuous cable, with cutting tool attached, is projected into the sewer—rotated for cutting—and retrieved and coiled in the storage drum—all by power. Write for details.

### Dual Fuel Engines

**559** To take full advantage of the less expensive fuels available, an increasing number of cities are turning to dual fuel engines for all their power requirements. For a detailed description of dependable dual fuel engines and how they operate, write ENTERPRISE ENGINE & MACHINERY CO., 18th and FLORIDA STS., SAN FRANCISCO 10, CALIF.

### Drinking Fountains and Coolers

**560** Use these sanitary drinking fountains and coolers in schools, hospitals, municipal buildings and wherever sanitary drinking water is needed. A new catalog presents descriptions and illustrations of a complete line of fountains and coolers, along with dimensions and installation data. Get your copy from THE HALSEY W. TAYLOR CO., WARREN, OHIO.

### Overhead Maintenance

**561** An adjustable-length handle ideal for a variety of overhead maintenance jobs is offered by J. B. SEBRELL, DEPT. AC, 300 S. LOS ANGELES ST., LOS ANGELES 13, CALIF. The handle may be used for removing street-light bulbs, pruning trees in public parks, and washing windows in public buildings. Literature on request.

### Concrete Pressure Pipe

**562** Whether water or sewer lines must be installed on steep grades, in a maze of underground city utilities, or in the confines of a plant, Lock Joint concrete pressure pipe can be laid bottle-tight, rapidly and with ease. Once installed, it is good for years of trouble-free service and high-carrying capacity. Write LOCK JOINT PIPE CO., EAST ORANGE, N. J.

### Protecting the Ballot

**563** As each ballot is deposited in a Perfection Balloting Machine, it is legally endorsed with the name of the voting district—proof that it was actually cast in a particular election. The machine also counts the ballots as endorsed. For a descriptive circular and prices, write S. RALPH CROSS & SONS, INC., DEPT. A, 120 MAYFIELD ST., WORCESTER 2, MASS.

### Portable Power

**564** Wherever you need portable power, on street construction and maintenance jobs or for any city emergency, you can rely on a Pioneer electric generator. Over 40 models are available, ranging from 500-watt to 12-KW continuous duty units. All are described in a new catalog offered by PIONEER GEN-E-MOTOR CORP., 5849 W. DICKENS AVE., CHICAGO 39, ILL.

*ANOTHER REASON WHY UTILITIES EXPECT MORE FROM*

**POWERS** *American*

***Setting the pace...***

# Pole-Master®

## HYDRAULIC DERRICKS

***3 MODELS... 7 SIZES***

You just can't beat the cost-cutting convenience of Pole-Master. At the flick of a lever, powerful hydraulic cylinders move the derrick to the position that's *exactly* right for the hoisting job. There's no exposed mechanism. Head sheave can be threaded from the ground.

When it comes to capacity, Pole-Master equals or surpasses conventional derricks of comparable rating. It stows *above* the body... never obstructs valuable cargo area space.

Aren't these the features you've long wanted in a derrick for your job?

**The powerful Series PM-2 Pole-Master, shown above on a Powers-American Series 800-C Line Body, is available in sizes for handling 40′, 55′, and 70′ poles.**

**DESCRIPTIVE LITERATURE ...plus complete price information IS YOURS FOR THE ASKING!**

## McCABE-POWERS AUTO BODY COMPANY

5900 NO. BROADWAY • ST. LOUIS 15, MO. 625 CEDAR ST. • BERKELEY 10, CALIF.

Series HD-2 Pole-Master Derricks can be furnished in sizes for handling 40′ and 55′ poles.

The Series HD-4 Pole-Master, actuated by four hydraulic cylinders, handles 55′ and 70′ poles.

Powers-American conventional derricks, tripod or T-type, are available in all sizes and capacities.

YOUR BRUSH DISPOSAL WILL BE

.....SAFER

.....FASTER

MORE ECONOMICAL

IF YOU USE ASPLUNDH CHIPPERS

## Here's Why...

Only Asplundh Chippers have been engineered, developed and *proven by the world's largest tree company.* Among the many ways that you benefit when you use Asplundh Chippers are these:

| FEATURE | BENEFIT TO YOU |
|---|---|
| *Tapered Blades and Wedges* | *Absolute safety.* Insures positive locking action. Tapered blades perform better, last longer; yet cost no more. |
| *Simplicity in Design* | To change blades requires *no* gauges or similar special equipment. Not necessary to remove half of housing to gain access. Operation can be performed right on the job in 20 minutes. Minimum of moving parts means less maintenance, less "down time", lower repair costs. |
| *Flywheel* | 300 lb. flywheel assures *constant, uniform, faster* chipping action; eliminates engine slow-down; permits reduced size of power unit resulting in lower operating costs. |

*For complete information send coupon below. Ask for free demonstration. Fill in and mail coupon today.*

ASPLUNDH CHIPPER COMPANY (Dept. C-3)
505 York Road, Jenkintown, Pa.

☐ Send FREE BOOKLET, *The Modern Approach to the Brush Problem*
☐ Arrange free demonstration.

NAME_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

BY ACTUAL TEST THE FASTEST CHIPPER MADE


# Catalogs for You

***Write directly to the manufacturers or use Post Card at P. 50***

### Incinerate Your Sewage Sludge

**565** If your city is considering new sewage facilities, investigate the C-E Raymond Flash Drying and Incineration System. For full details on this modern method of sludge disposal, write COMBUSTION ENGINEERING, RAYMOND DIVISION, 1315 N. BRANCH ST., CHICAGO 22, ILL.

### Get Watertight Joints

**566** To prevent water from seeping through your concrete foundations, get Sealtight "Durajoint," an effective waterstop made by Electrovert and available from TECON PRODUCTS, INC., 304 S. ALASKAN WAY, SEATTLE 4, WASH. "Durajoint" is offered in easy-to-handle 50-foot coils. A new bulletin will be furnished on request.

### Portable Tamper That Vibrates

**567** Here is a portable tamper that vibrates as it tamps earth, rock or asphalt to uniform densities. Equipped with a gasoline engine it needs no outside power, and may be used for backfilling trenches and for work in difficult-to-reach places. The tamper delivers 2,200 1,800-pound impacts per minute and moves as much as 45 feet per minute. Get all the facts from JAY CO., COLUMBUS 7, OHIO.

### Get 2-Way Radio Calls in Cars, at Home

**568** In addition to the 2-way portable radio equipment for police and fire departments made by the INDUSTRIAL RADIO CORP., there is now offered the Volunteer receiver by which radio calls can be received in the home or in private cars. City officials interested in this small, transistorized receiver can write the company at 428 N. PARKSIDE AVE., CHICAGO 44, ILL.

### Choosing The Right Chain-Link Fence

**569** A properly chosen and erected Realock fence will help to protect any municipal property — parks, playgrounds, cemeteries — against arson, theft, vandalism and trespassing. Installation is economical and maintenance costs are negligible. For *Catalog F-915,* write REALOCK FENCE DEPT., THE COLORADO FUEL AND IRON CORP., DENVER, COL.

### Fire Hydrants

**570** Easy to operate and economical to maintain, Ludlow fire hydrants **won't flood or freeze,** and feature a pop-off sleeve coupling that releases the hydrant head from the stem in case of traffic damage. Ludlow hydrants are fully described in *Bulletin 54-H.* For your copy, write THE LUDLOW VALVE MFG. CO., TROY, N. Y.

### Automatic Water Valves

**571** A full line of automatic valves including altitude, back pressure, float, pressure reducing, surge relief, and combustion units, with hydraulic and electric pilot controls, may be obtained from the ROSS VALVE MFG. CO., INC., 8 OAKWOOD AVE., TROY, N. Y.

# Certificate of Satisfaction

**Whereas** over 1,800 municipalities enjoy complete satisfaction with "heavy duty" DUNCAN-BUILT products, and

**Whereas** more new cities daily discover the genuine economy of DUNCAN's "NO WIND" feature, and

**Whereas** each DUNCAN product represents the finest in engineering, resulting from over 20 years of parking meter experience.

**Now therefore,** we certify that DUNCAN's dependable all-weather operation will earn your unqualified endorsement of this certificate.

Duncan-Miller Model "60"

Duncan-Miller Duplex

Duncan-Miller Model "50"

Duncan Fine-O-Meter

Duncan-Automaton

DUNCAN PARKING METER CORP.
835 NORTH WOOD STREET, CHICAGO 22, ILLINOIS
FACTORIES: HARRISON, ARKANSAS AND MONTREAL, P.Q., CANADA
Manufacturers of fully automatic and manual parking meters.

***F. M. D. Tractor-Loader*** **gives you ⅝ yard bucket capacity. A touch of a lever and double-acting cylinders on lift arms and bucket deliver positive down pressure . . . over two tons of breakaway power . . . 2000 lbs. load capacity at full lift. Easily attached blade makes it an excellent unit for backfilling, grading and dozing.**

## Low-Cost FORDSON MAJOR DIESEL

**The right combination of capacity and mobility makes the Fordson Major Diesel today's best power buy for many types of ditching, trenching and excavating jobs. Here's what we mean:**

**Equipped with a backhoe, the Fordson Major Diesel can dig as wide as 3 feet, as deep as 12 feet. It swings a full 180 degrees, has plenty of reach to load high-bodied trucks. Fast, positive hydraulic control makes accurate digging easy.**

**Though big and rugged for work in adverse conditions, the Fordson Major Diesel is exceptionally maneuverable . . . easy to handle in close quarters and over rough ground. It's also highly mobile, lets you handle several jobs a day in different locations.**

**You can check the complete specifications of the low-cost Fordson Major Diesel by calling your nearby Ford Tractor and Equipment Dealer. Or, write to:**

Low cost
FORDSON
MAJOR
DIESEL

**TRACTOR AND IMPLEMENT DIVISION**
**FORD MOTOR COMPANY**
**Birmingham, Michigan**

Postage Will be Paid by Addressee

No Postage Stamp Necessary If Mailed in the United States

**BUSINESS REPLY CARD**
FIRST CLASS PERMIT No. 281, SEC. 34.9 P. L. & R., NEW YORK, N. Y.

THE AMERICAN CITY MAGAZINE
470 FOURTH AVENUE
NEW YORK 16, N. Y.

**If you need information on any type of municipal service or equipment, these reply cards will get action in a hurry.**

To THE AMERICAN CITY's Catalog Supply Department:
Please send literature on items numbered as follows, starting on Page 28.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 475 | 483 | 491 | 499 | 507 | 515 | 523 | 531 | 539 | 547 | 555 | 563 |
| 476 | 484 | 492 | 500 | 508 | 516 | 524 | 532 | 540 | 548 | 556 | 564 |
| 477 | 485 | 493 | 501 | 509 | 517 | 525 | 533 | 541 | 549 | 557 | 565 |
| 478 | 486 | 494 | 502 | 510 | 518 | 526 | 534 | 542 | 550 | 558 | 566 |
| 479 | 487 | 495 | 503 | 511 | 519 | 527 | 535 | 543 | 551 | 559 | 567 |
| 480 | 488 | 496 | 504 | 512 | 520 | 528 | 536 | 544 | 552 | 560 | 568 |
| 481 | 489 | 497 | 505 | 513 | 521 | 529 | 537 | 545 | 553 | 561 | 569 |
| 482 | 490 | 498 | 506 | 514 | 522 | 530 | 538 | 546 | 554 | 562 | 570 |
| | | | | | | | | | | | 571 |

I would also like to receive manufacturers' booklets on.....

.....

.....

.....

Name: (Please Print).....

Title.....

Address.....

..... 12-56

A Listing of Your Business Connection is Important

To THE AMERICAN CITY's Catalog Supply Department:

Please send me further information on products described in "Purchasing News" section beginning on page 189, as circled below:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 941 | 946 | 951 | 956 | 961 | 966 | 971 | 976 |
| 942 | 947 | 952 | 957 | 962 | 967 | 972 | 977 |
| 943 | 948 | 953 | 958 | 963 | 968 | 973 | 978 |
| 944 | 949 | 954 | 959 | 964 | 969 | 974 | 979 |
| 945 | 950 | 955 | 960 | 965 | 970 | 975 | 980 |

I would also like to receive manufacturers' booklets on.....

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Name: (Please Print).....

Title:.....

Address:.....

..... 12-56

A listing of Your Business Connection is Important


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BUSINESS REPLY CARD

FIRST CLASS PERMIT No. 281, SEC. 34.9 P. L. & R., NEW YORK, N. Y.

THE AMERICAN CITY MAGAZINE

470 FOURTH AVENUE

NEW YORK 16, N. Y.

**Save time and effort by using these reply cards when you want additional information on any product or service mentioned or advertised in this issue**

# any thread you need!

## MUELLER CORPORATION STOPS

A combination of practically any type inlet or outlet thread on Mueller Corporation Stops permits you to connect to any type main and run the service line best suited to your needs. You may have a requirement for connecting to thin walled pipe. For this purpose, use the Mueller compression joint inlet with either copper or increasing I.P. thread outlet. Mueller inlet threads form a strong mechanical connection to the main. The compression joint, composed of a rubber sealing ring encased in a copper retaining ring, is tightened down against the main to provide a pressure-tight seal. Check your particular requirements, then contact your Mueller Representative or write direct for complete information on the corporation stop that will fit your needs.

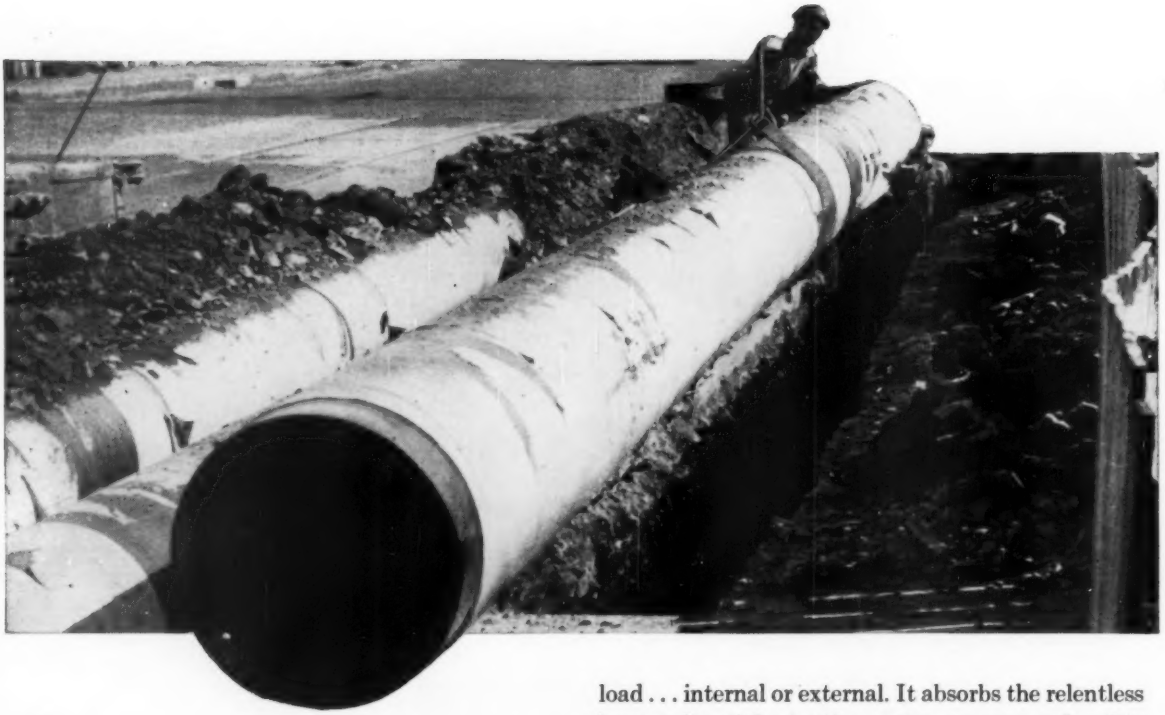
**MUELLER CO.**

*Dependable Since 1857*

MAIN OFFICE & FACTORY DECATUR, ILLINOIS

# FIRST IN RELIABILITY...

## the major requirement in today's water lines



ONCE SUPPLY LINES and water mains of National Seamless Steel Pipe are laid, they are good for many years of continuous service. They can be depended upon to withstand the punishing external forces prevalent today in America's cities and towns.

Why? Simply because of Seamless Pipe's high tensile strength, its greater toughness and ductility. National Seamless Steel Pipe is shatterproof. Its uniform wall strength eliminates sudden ruptures that can completely upset a town's water supply.

*Steel* pipe possesses the ability to "give" with a load . . . internal or external. It absorbs the relentless hammering of fluctuating water pressure and resists the punishing shock of heavy, high speed traffic. In addition, it has the beam strength necessary to withstand bending and deflection when, due to trench settlements and washouts, it is not supported for its full length.

Plan on putting the advantages of USS National Seamless Steel Pipe to use in your future installations. It is manufactured to A.W.W.A. specification requirements, and is approved by Underwriters' Laboratories, Inc. Protective coatings are available for various service conditions.

SEE The United States Steel Hour. It's a full-hour TV program presented every other week by United States Steel. Consult your local newspaper for time and station.

NATIONAL TUBE DIVISION, UNITED STATES STEEL CORPORATION, PITTSBURGH, PA.

COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS

UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

**NATIONAL *Seamless* STEEL PIPE**

WALLS WITHOUT WELDS

**UNITED STATES STEEL**

**Road and park maintenance.** The Universal 'Jeep' with grader or dozer blade demonstrates its versatility on road maintenance and grading as well as many other jobs. With the extra traction of its 4-wheel drive and special low gear range, it's a workhorse that helps keep work moving every day in the year. And with snow blade, it keeps roads, driveways and parking areas open.

# Only 4-Wheel-Drive 'Jeep' vehicles do so many jobs so well!

**Mobile power.** The Universal 'Jeep' with power take-off operates air compressors, mobile welders, generators, winches and many other types of equipment. And 'Jeep' mobility saves travel time between jobs.

**The 'Jeep' Station Wagon.** With its ruggedness, stamina and "go-anywhere" dependability the 4-Wheel-Drive 'Jeep' Station Wagon is ideal for many maintenance assignments. It carries up to 110 cubic feet of equipment and supplies or 6 supervisors or workers.

**Transporting workers and supplies.** Whether it's snow, sand, mud or ice — rugged terrain or severe weather — the 4-Wheel-Drive 'Jeep' Truck gets workers, supplies and equipment through when other vehicles can't. It shifts easily into conventional 2-wheel drive on good roads.

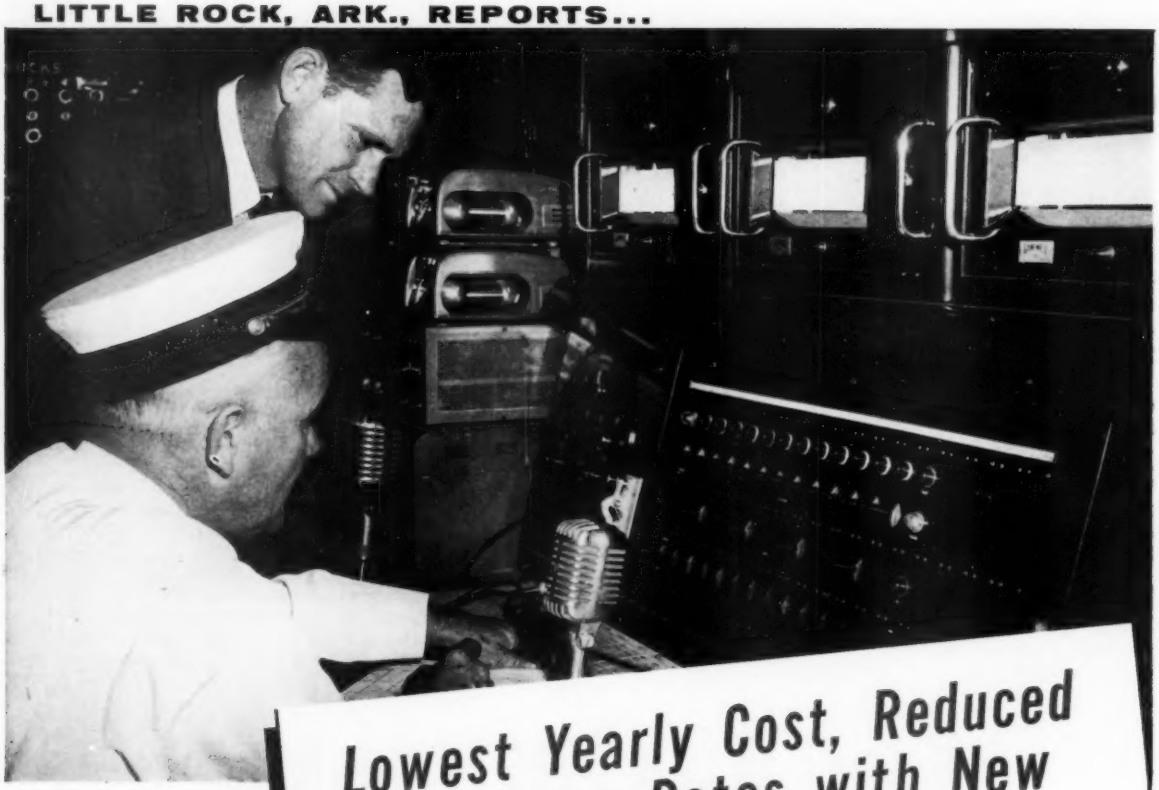
Economy-minded officials everywhere are turning more and more to the 'Jeep' family of 4-Wheel-Drive vehicles to help get work done faster at lower cost. And no wonder! Their cost-cutting performances on an endless variety of jobs are matched with long life and low upkeep. And the extra traction of their 4-wheel drive takes them where other vehicles can't go. They shift easily into conventional 2-wheel drive for normal highway travel. Their "go-anywhere" dependability is extra insurance in public emergencies. See your nearest Willys dealer for a demonstration today, or write for information.

The 'Jeep'®
family of 4-Wheel-Drive vehicles

**WILLYS... makers of the world's most useful vehicles**

WILLYS MOTORS, INC., TOLEDO 1, OHIO

**LITTLE ROCK, ARK., REPORTS...**



Fire Chief Gann Nalley, and Mayor Mann, welcome the modern Gamewell Fire Alarm system installed to protect the lives and property of their fast-growing community.

# Lowest Yearly Cost, Reduced Insurance Rates with New GAMEWELL SYSTEM

## FIRE FACTS

**in Little Rock**

Original Gamewell system served efficiently for 42 years. 202 new boxes located in high value districts.

Average of 35 boxes per square mile of built-up area.

Class A Form 4 switchboard, with operator's console, Loud Speaker Inter-communication and paging system serving 11 fire stations, and fire station recording and alarm sounding equipment.

Industrial plants to be safeguarded through Gamewell "Master Box Plan" for extra protection of workmen and industrial plants.

Complete system installed, depreciated and maintained for less than $70.00 per box per year. Additional boxes can be installed and maintained for substantially less than this figure.

*Remember-a Gamewell System is FIRST when seconds count!*

On April 14, 1956, Little Rock joined the ever-increasing list of communities which have thoroughly investigated all types of fire alarm systems — and selected Gamewell. Here is what they found:

- Average annual cost would be as much as 2½ times cheaper than leased voice type service.
- Gamewell system sets into operation, automatically, the dispatching facilities for the entire fire defenses — including all required central office equipment. The fire alarm system is tailored exactly to the Fire Chief's needs and city's fire defense plan.
- It contributes to improvement of city's fire insurance rating from Class IV to III — a saving to property owners of some $100,000 a *year!*

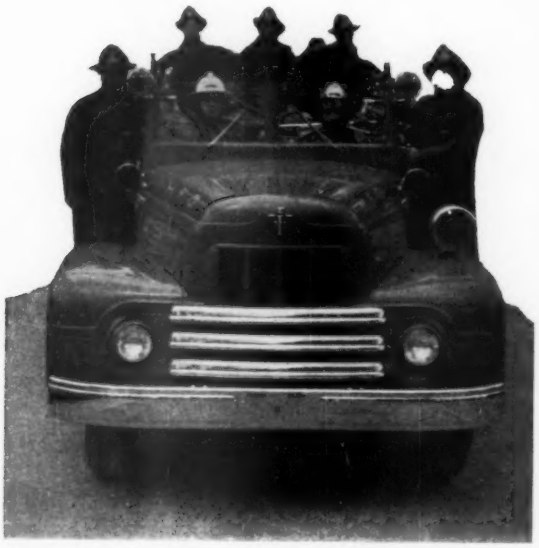
This new 202-box system was planned for coverage of high value districts and will be expanded to protect the fast-developing outlying areas — additional boxes quickly added at very low cost.

**Get ALL The Facts!** You can bring these same advantages to *your* community. Just ask for a FREE Gamewell Survey. And, most important, be sure you have *all* the facts on costs and completeness of vital municipal fire alarm protection — send for the Gamewell Booklet, "Conversation or Organization". Write:

**THE GAMEWELL COMPANY**
**Newton Upper Falls 64 Massachusetts**

GAMEWELL®

**THE BOX IS POSITIVE · REDUCES HUMAN ERROR**



Here is the 500-gpm Peter Pirsch with (front) Dalford Eaves, Chief Vickery, Assistant Chief Robert Eaves, Hubert Eaves, and (rear) Billy Ethridge, George Marett, and Harold Bryson.

## Hartwell's New Pumper

WHEN Hartwell, Ga. (population 3,000), bought a 500-gpm Peter Pirsch pumping engine on an International Harvester chassis, it was accorded a more favorable insurance classification (7). Personnel numbers two full-time drivers, 12 volunteers, who are paid $5 each per call, and Maurice Vickery, fire chief.

## Marked and Unmarked Police Cars?

IS it more efficient for law-enforcement vehicles to be clearly marked? The American Municipal Association has gathered some opinions on this subject:

***In Chicago, Ill.***, new painting for 448 squad cars was ordered with a view to making them show up better and thus deter persons with criminal intentions. Previously, the cars were always black. The new design will be white tops with "POLICE" painted in large white letters on the black sides. However, the Chicago police will keep the plain black of their 75 detective bureau cars and the 17 cars of the stolen auto detail.

***In New York City***, when council members talked of forbidding the police department to use unmarked cars, the head of the police defended this use by saying that they were assigned to areas where there had been numerous accidents and they helped bring about sizable cuts in the accident rate. The council had feared that motorists, on being approached by an unmarked car, would think they were in danger of a hold-up and a race between cars might ensue.

***Connecticut***, ***New Jersey***, and ***Washington*** are among states to use unmarked cars on their rural highways.

In a poll of ***Minnesota*** residents, the ***Minneapolis Tribune*** found that more than 70% of both urban and rural population approved the use of unmarked cars in police work. Reasons are: drivers will be more cautious because they will never know when a police car is around; more violators will be caught; and if a driver is doing what he should, the markings on police cars do not matter.

## New Fire Apparatus Specs

NEW specifications for Motor Fire Apparatus, NFPA No. 19, adopted by the National Fire Protections Association, the International Association of Fire Chiefs, and the National Board of Fire Underwriters, eleiminate the Class B pumper and call for rating of capacity of all fire department pumping engines at 150 psi (with the exception of small-capacity booster pumps which are not classified as pumping engines). Also, the minimum water-tank capacity for pumping engines has been increased to 200 gallons to permit more effective streams initially before hose is connected to hydrants.

Though advisory, the specifications are widely used by municipalities in the selection of fire apparatus. Copies are available from the National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass., at 50 cents per copy.

## Good Shooting at Kinston, N. C.

City Manager Roy R. Robinson (right) with Sergeant John Laws of the North Carolina State Highway Patrol, and Mayor Guy Elliott at the city's well-equipped pistol range.

THE fourth annual pistol match of the Kinston (N. C.) Police Department was held in May on the range dedicated five years ago. Since that time the range has been enlarged to 50 positions, both 25 and 50 yards with steel framed target holders and shelter for the shooters.

ROY R. ROBINSON
*City Manager*
*Kinston, N. C.*

# Allis-Chalmers HD-11G Tractor Shovel

# PREPARES GARBAGE PLOT FOR GARDEN SPOT

The wide HD-11G shovel (almost 8 ft) is used as a dozer blade to spread refuse. There's 32,000 lb of weight on almost 24 sq ft of track to insure desired compaction of the trash.

Fill material (more than 2 yd at a bite) is scooped out surely and swiftly. The 105-belt-hp Allis-Chalmers diesel engine furnishes plenty of power for traction and hydraulics. Extra-long tracks maintain balance, even with capacity loads.

Garbage disappears under a layer of earth — closing the door to vermin, insects and odors. Before long, Austin residents will have increased recreation facilities where this HD-11G is working.

One of the sanitary landfills operated by the city of Austin, Texas, is located next to a city park. Here's where Austin's new Allis-Chalmers HD-11G tractor shovel is busy handling up to 120 tons of garbage daily. Spreading, covering, compacting, the hard-working 11G tidies up the landscape burying garbage, reclaiming the area for additional park acreage.

Gravel pits, privately owned, are being used by the city at no charge in other reclamation projects. These pits will be filled, improved and the land returned to owners greatly increased in value.

Check the advantages of using Allis-Chalmers crawler tractor equipment at your fill area. Advanced-design features, versatility and production ability make them suitable for all sanitary landfill jobs. See your Allis-Chalmers construction machinery dealer. He will give you details and help you select the right unit for your needs from the complete Allis-Chalmers line.

ALLIS-CHALMERS, CONSTRUCTION MACHINERY DIVISION, MILWAUKEE 1, WISCONSIN

**ALLIS-CHALMERS** AC

# Let us remember the mountains of Attica and not abandon our land

*"There are mountains in Attica which can now keep nothing . . . but which were clothed, not so very long ago, with fine trees producing timber . . . while the country produced boundless pasture for cattle . . ."*

As early as 300 B.C., when Plato thus lamented a tragedy of exhausted natural resources, there was little left of Attica's fertility — only insects crawling about the *"sites of extinct water supplies."* A lesson 2000 years old, to be heeded if we would escape the fate of Attica.

And the first logical step in vital water conservation is to replace flat, waste-conducive rates with Badger Metering.

The demand for water is at its peak in our history. All classes of users compete for more and *more.* A 75% increase in consumption is expected by 1975. In some areas the situation is already critical.

Curtailing waste with Badger Meters — fairly apportioning the responsibility and accounting for water use — is not only a sound investment in your community's future, but essential to its very survival.

*The time to act is now — while there's still some water left to save!* Write today for information on Badger Meters, or to arrange for a representative to call.

# Badger Water Meters

*Badger Meters have conserved it for 50 years*

**BADGER METER MFG. CO.** MILWAUKEE 45, WISCONSIN

# OUR FUTURE IS (and in your

MODERNIZED **cast iron**

# IN THE SKIES... hands, too)

To keep pace with America's constantly increasing demand for water, you need the help of the elements. And the public.

We can lend a hand there.

Our national advertising stresses advance planning of water facilities... warns millions of Americans—homeowners, apartment dwellers, industrialists about waste, pollution, the need for efficient water systems. It points out the need for new water sources, adequate treatment and distribution, realistic water rates, far-sighted water legislation... all the facts the public must know to cooperate intelligently with you and your fellow water officials in your difficult job of keeping America plentifully supplied with water—now and in the future.

## CAST IRON PIPE. Serves for Centuries!

For over 70 public utilities in the United States and Canada, cast iron mains laid over a century ago are still serving dependably. This long, trouble-free service means lower maintenance costs... fewer tax dollars expended... fewer headaches for the waterworks officials who specify cast iron.

And today, modernized cast iron pipe, centrifugally cast, is even more rugged, uniform, durable. When needed, it's available with cement-lining to assure sustained carrying capacity throughout its generations of service.

The next time you plan extensions to your distribution system remember, cast iron pipe means the ultimate in long term reliability and economy.

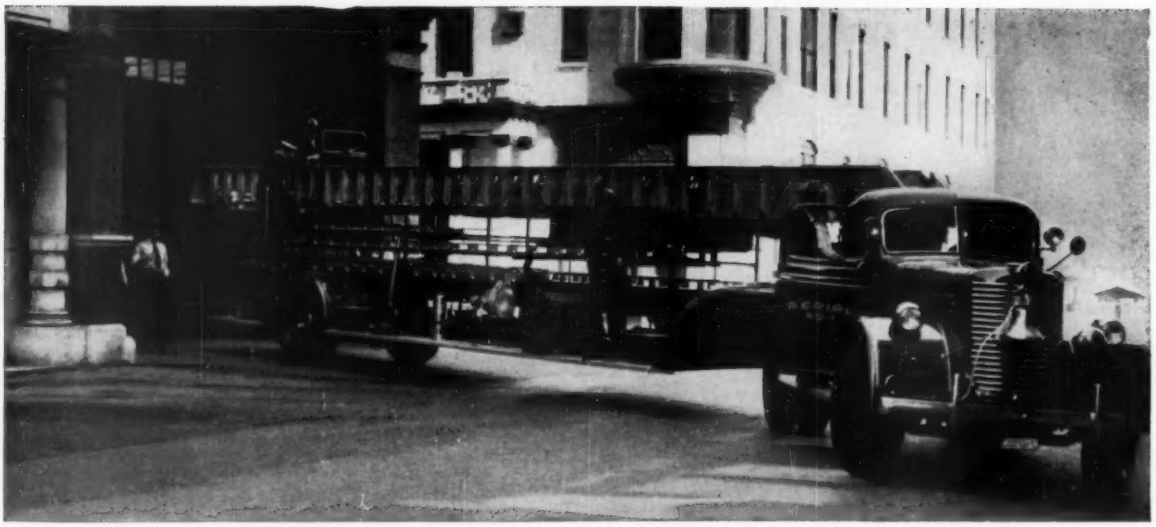
Cast Iron Pipe Research Association, Thos. F. Wolfe, Managing Director, 122 So. Michigan Ave., Chicago 3, Illinois.

This rugged old cast iron water main, still serving and saving tax dollars for the citizens of *Detroit, Michigan,* is now in its 115th year of dependable service.

CAST Q IRON

The Q-Check stencilled on pipe is the Registered Service Mark of the Cast Iron Pipe Research Association.

**pipe** FOR MODERN WATER WORKS



# Knoxville selects General Electric Progress Line Two-Way Radio System for fire protection

Knoxville, Tennessee, selected General Electric's Progress Line two-way radio for its Fire Department because it offers highest reliability with lowest maintenance cost. High fidelity communication is assured by the controlled reluctance microphones, standard on all Progress Line radios. And only General Electric two-way radios are equipped with 6600 series pre-tested, long-life communication-type tubes.

According to James Swanner, Superintendent of Fire Alarms, solid radio contact can be maintained between his base radio station and that of the Chattanooga Fire Department—114 miles away. He explained that this contact was requested by Civil Defense authorities to tie together fire fighting facilities of the two cities in event of disaster. General Electric Communication Engineers placed the Knoxville base station atop a ridge several hundred feet above surrounding terrain, to assure meeting the CD requirement.

All of Knoxville's fire stations are tied together by the radio system. In addition, 15 engines, a Civil Defense emergency truck, ambulance, and cars of the Chief, Assistant Chief, Superintendent of Fire Alarms, two inspectors, and a mechanic are now smoothly coordinated by two-way radio. This progressive Fire Department has already demonstrated many times how General Electric two-way radio provides improved fire protection for the Knoxville metropolitan area.

* * *

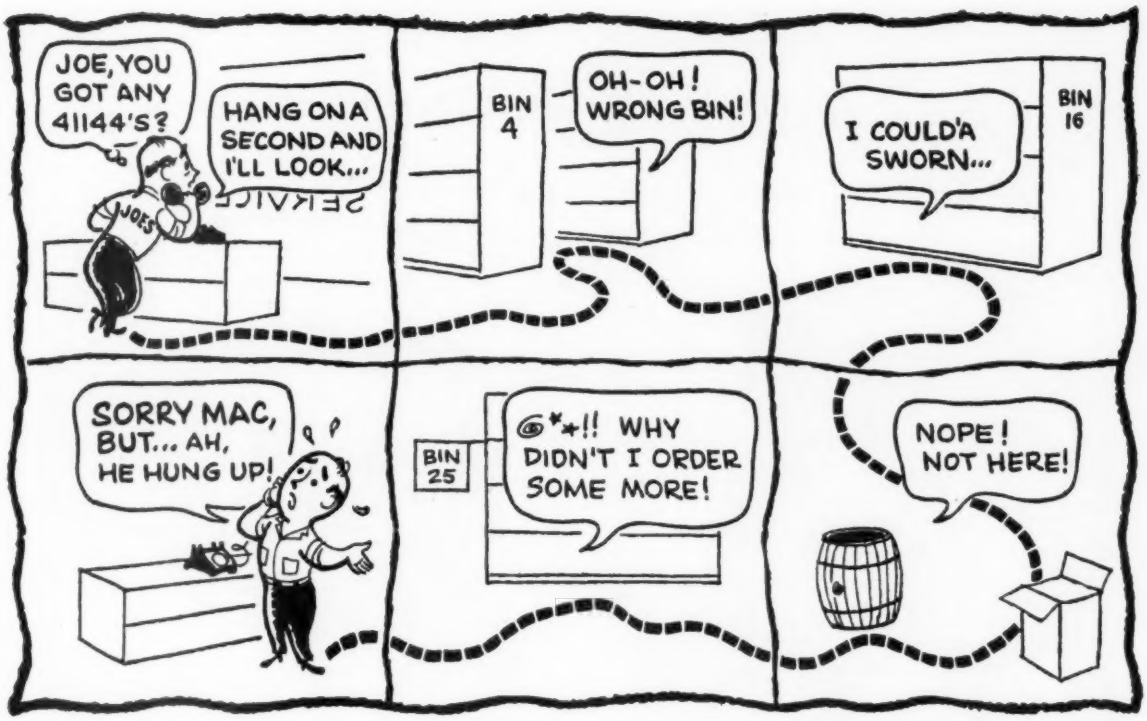
Your use of two-way radio can save money for taxpayers in your city through reduced municipal fire insurance rates for cities with radio-equipped fire departments.

**Dispatchers** at Knoxville Fire Department Headquarters handle all telephone and two-way radio coordination. All fire station and key vehicles are coordinated via new General Electric two-way radio system.

**For Sales and Service**...see "Radio Communication Equipment" in your yellow pages. Or, write: General Electric Co., Communication Equipment, Section X10126, Electronics Park, Syracuse, N.Y. *In Canada:* C.G.E. Electronics, 181 Landsdowne Avenue, Toronto.

*Progress Is Our Most Important Product*

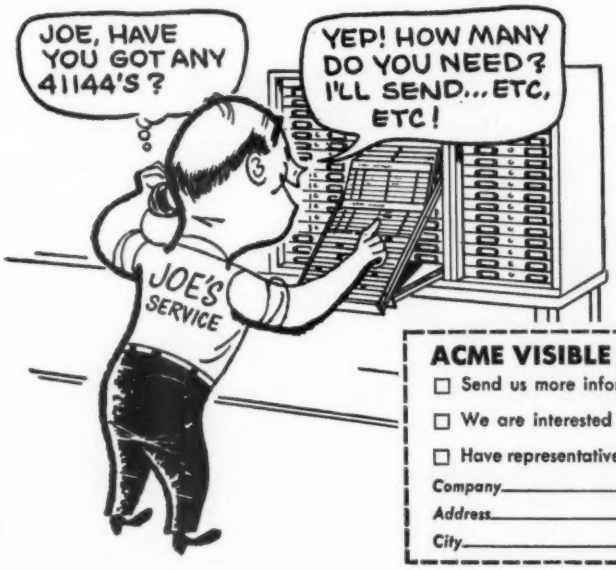
GENERAL ELECTRIC




# and then he bought an

## ACME VISIBLE

# INVENTORY CONTROL SYSTEM




Know *what* you have, *where* it is and *when* you will need more! Regardless of the size of your business, inventory control enables you to get faster, more dependable results with substantial savings in work, time and money. Ask the man from Acme to show you samples.

**ACME VISIBLE RECORDS, INC.**
CROZET, VIRGINIA
DISTRICT OFFICES AND REPRESENTATIVES IN PRINCIPAL CITIES

**ACME VISIBLE RECORDS, INC., Crozet, Virginia** FI256

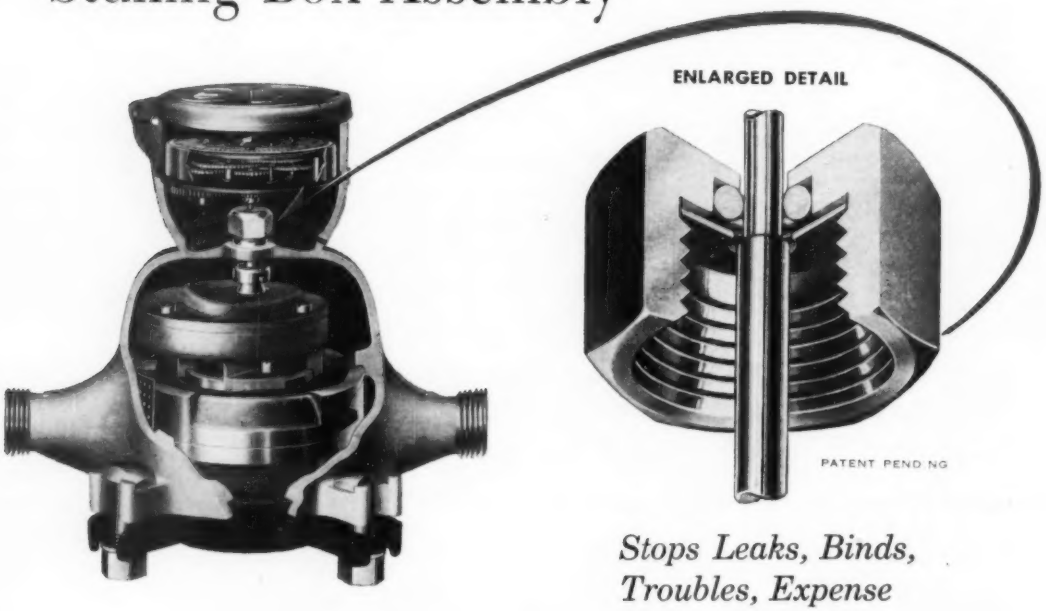
- ☐ Send us more information on Inventory Control System.
- ☐ We are interested in Acme Visible equipment for_____ (KIND OF RECORD) records.
- ☐ Have representative call. Date_____ Time_____

Company_____ Attention_____

Address_____

City_____ Zone_____ State_____

# The Rockwell "O" -Ring Stuffing Box Assembly




*Stops Leaks, Binds, Troubles, Expense*

## The Greatest Single Advance In Water Meter Construction In Years

Here's another outstanding development from Rockwell Research. It's a sure cure for all the headaches that go with meter stuffing box maintenance. Perfected four years ago, this Rockwell "O"-Ring Stuffing Box assembly has now been thoroughly field tested. *It won't leck; can't bind!* Meters with this construction run more freely, stay accurate longer. Worn spindles are a thing of the past.

Now *all* Rockwell water meters make use of this *exclusive* "O"-Ring design upon which patent application has been made. There's no extra cost for this construction, but a lot of extra satisfaction and value. Ask your Rockwell representative to demonstrate. And be sure to inquire about the use of "O"-Ring stuffing box nuts as interchangeable replacements for stuffing box assemblies in earlier model Rockwell meters.

**ROCKWELL MANUFACTURING COMPANY**

**PITTSBURGH 8, PA.** Atlanta Boston Charlotte Chicago Dallas Denver Houston Los Angeles Midland, Tex. New Orleans New York N. Kansas City Philadelphia Pittsburgh San Francisco Seattle Shreveport Tulsa In Canada: Rockwell Manufacturing Company of Canada, Ltd., Toronto, Ontario

## ROCKWELL WATER METERS

*A Size and Type For Every Kind of Service*

*for lasting quality construction castings*

# SEE NEENAH FIRST

More and more building contractors specify NEENAH fine quality construction castings FIRST. The Neenah line also includes manhole frames and covers, catch basin inlets and many other items to meet any construction requirement. Write today for your free copy of Catalog "R," second edition: 140 pages with pictures and description.

**NEENAH FOUNDRY COMPANY**

NEENAH, WISCONSIN

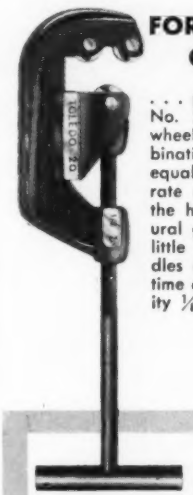
Chicago Office 5445 N. NEVA AVE., CHICAGO 31, ILL.



*EVERY TIME*

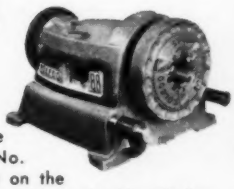
## You Thread Pipe . . .

. . . you'll appreciate this popular TOLEDO trio. Pick up the rugged, dependable TOLEDO small Ratchet Pipe Threader. Pull the pawl—drop in a die—you're ready to thread in seconds. You'll like the easier handling, better grip, the famous TOLEDO quality. (⅛ to 2" sizes.) Then,



**FOR QUICK CUT-OFF . . .**

. . . pick up a TOLEDO No. 20 Pipe Cutter, a wheel and roller combination that can't be equalled for fast, accurate cutting. Frame fits the hand for easy, natural grip. Cutter leaves little or no burr. Handles easier to save you time and effort. (Capacity ⅛ to 2".) Then,



**FOR MAXIMUM PRODUCTION**

. . . put the lightweight No. 88 Power Vise on the job. Powerful, efficient, the No. 88 features the exclusive Spin-Torque Chuck for easy opening and closing. Mounts on bench, service truck or on legs with tray. Choose TOLEDO quality pipe tools for unmatched satisfaction. You'll thank your lucky stars you did!

**THE TOLEDO PIPE THREADING MACHINE CO.**
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THREADED PIPE
it's tight—it's best—costs less

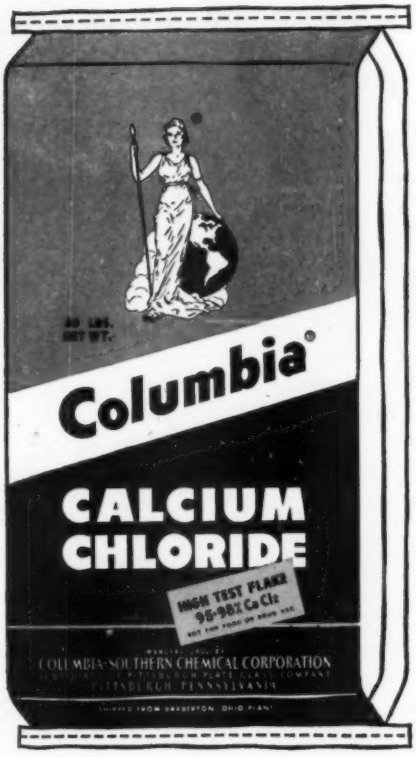
BUILDERS OF THE WORLD'S FINEST PIPE TOOLS

# TOLEDO®

PIPE THREADERS • PIPE WRENCHES • PIPE MACHINES

# Announcing...
# High Test Flake

## COLUMBIA CALCIUM CHLORIDE




## Now ready for your Winter Ice Control Program

Columbia HIGH TEST FLAKE Calcium Chloride which tests 95-98% $CaCl_2$ is now being shipped from the Barberton, Ohio, plant.

This new HIGH TEST FLAKE production is in addition to Columbia's regular flake.

Columbia HIGH TEST FLAKE Calcium Chloride has approximately 20% higher calcium chloride content than regular flake. An 80 pound bag of HIGH TEST FLAKE does the job of 100 pounds of regular flake. This higher concentration results in (1) smaller tonnages for you to handle, and (2) freight savings due to the higher calcium chloride content by weight.

Now, for the first time, Columbia-Southern offers $CaCl_2$ users a convenient, easy to handle 80 pound bag.

Contact your Columbia supplier or your nearest district sales office for prompt delivery on your HIGH TEST or REGULAR FLAKE calcium chloride requirements.

## Use Columbia Calcium Chloride for efficient,* economical Winter Ice Control

Columbia Calcium Chloride applied to abrasive stockpiles makes them freezeproof, allows for easy spreading. The abrasives thus treated immediately imbed themselves in icy surfaces for sure skidproofing protection. Abrasives are less apt to blow away, and one truckload of treated abrasives goes as far as 3 truckloads of untreated.

Columbia Calcium Chloride applied directly to ice melts it quickly and permits it to be easily bladed off the road.

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## *with Recordak Microfilming*

**1500 estate documents on 1 roll.** Hon. Leon Schwerzmann, Surrogate, checks one of the rolls of Recordak Microfilm, which has replaced bound volumes. Estate papers are processed and recorded up to 20 times faster than with previous method. Savings in filing space are 99%. Positive film copies are used for fast reference in Recordak Film Reader. Negatives are vault-stored for extra protection.

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**Savings in certified copies.** A Kodak Verifax Copier is used to make certified copies 15 times faster than typing. This versatile copier also produces an offset plate in one minute for less than 20¢.

*Learn how your operations* can be simplified in like manner with Recordak Microfilming and Verifax Copying. Chances are your investment in equipment (as little as $698) will be repaid many times over the very first year.

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(Subsidiary of Eastman Kodak Company)

**originator of modern microfilming—and its application to government routines**

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(*Subsidiary of Eastman Kodak Company*)
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Gentlemen: Please send further information on the use of the Recordak Microfilmer and Verifax Copier.

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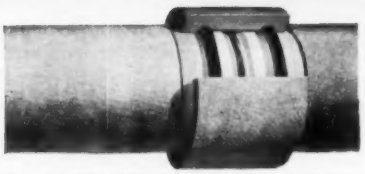
# your tax money!

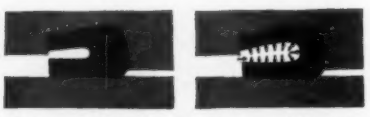
Non-tuberculating, non-corroding, non-electrolytic . . . these features of non-metallic K&M Asbestos-Cement Pressure Pipe mean low, stable pumping pressures and NO MAINTENANCE . . . Big tax savings for American communities!

But there are further tax savings in initial cost and installation with K&M Asbestos-Cement Pipe. It's light in weight, easily and inexpensively transported and handled. And K&M's EXCLUSIVE "Fluid-Tite" Coupling allows quick assembly under any weather conditions—*even with unskilled labor.*

Write today for complete information.



**K & M "FLUID-TITE"® COUPLING**



Compressible rubber rings allow easy pipe insertion.

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**Model H PARK-O-METER**

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Versatile, simple, positive and completely automatic — the Model H PARK-O-METER serves the best interests of public and parking authority alike. It produces maximum revenue, maximum turnover of available space. And it's a public favorite in some 1200 cities throughout the world.

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Miller-Hall PARK-O-METER COMPANY

# NOW... Cashiering and Bookkeeping in one unit... a great space-saving, public relations tool!

This Customer Service Counter is a complete working station for all cashiering and bookkeeping operations. It provides the highest degree of efficiency, in the smallest amount of space.

The customer has ideal counter height for making out checks and applications. There's even a continuous parcel shelf, encouraging customers to step aside so that the next in line may be served.

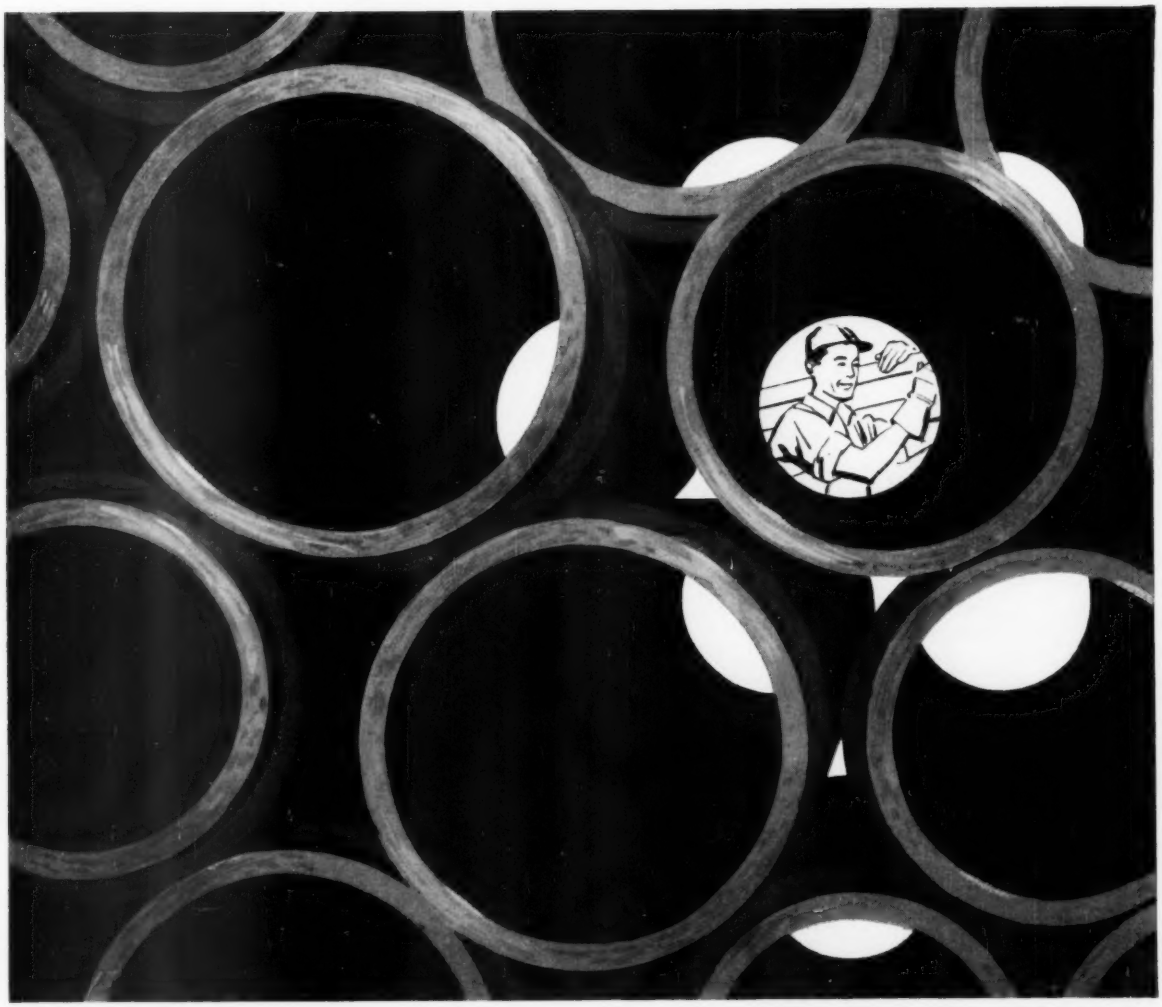
The clerk *always* faces the customer...wastes no time walking from bookkeeping desk to counter and back. Customers are served more promptly, efficiently and courteously. The "extra" desk is eliminated.

With complete facilities within arm's reach, the clerk works seated comfortably at her desk, ending the usual "standing" counter cashiering, with the fatigue and errors which are bound to result.

In larger offices, two or more units may be joined, providing any desired number of work stations. Singly, or in combination, these sections have the rich appearance of custom-made counters, but provide the adaptability that custom-made counters cannot hope to match. Each unit can house record forms of any size. Most important, desk-height, *certified* fire-insulated units are available to protect counter-stored vital records, 24 hours a day, at their point-of-use.

See for yourself the many advantages of the Sectional Customer Service Counter. Send for our free booklet on the subject, SC764. You'll find it interesting and informative. Just write to Remington Rand, Room 2240, 315 Fourth Avenue, New York 10, New York, and ask for SC764.

**Remington Rand**
DIVISION OF SPERRY RAND CORPORATION



# Modern building codes include **BERMICO®** bituminized fibre pipe—*modern pipe for modern living*

Far-sighted code authorities everywhere are recognizing the advantages to their communities of modern, light-weight, root-proof Bermico Sewer Pipe—the dependable pipe *that comes in 8-foot lengths for easier installation.*

Already certified in communities all over the country and recently given the stamp of approval of the Southern Building Code Congress, Bermico is widely recognized today as the Modern Pipe for Modern Living.

Made of tough cellulose fibre impregnated with coal-tar pitch, it resists acids and alkalies, is strong, and stands up under temperature changes and soil settlement—for lasting protection against failure in sewer lines and drainage.

Available in all diameters from 2″ to 6″, Bermico is the only bituminized fibre pipe with a complete line of fittings—Wyes, Tees, and Bends—made of the same material. You can't buy and install root-proof pipe for less.

Your community will be grateful when you modernize your plumbing code to include Bermico, the modern pipe for modern living. Thousands already have. For technical information, write Dept. TB-12, Brown Company, 150 Causeway Street, Boston 14, Mass. *(Mills:* Berlin, Gorham, North Stratford, N. H.; Corvallis, Ore.)

**BERMICO®**
for house to sewer or septic tank

**BERMISEPTIC®**
for septic tank disposal fields

*Guarantee of Quality* BPI BITUMINOUS PIPE INSTITUTE

# Six-year record shows Alcoa® Aluminum doubles sign life in Charlotte, N. C.

HERMAN HOOSE, Traffic Engineer, Charlotte, N. C.

In Charlotte, N. C., Traffic Engineer Herman Hoose has already put 8,550 signs of Alcoa Aluminum into service and is gradually replacing the last 450 made of steel. He spells out his reasons in dollars and cents.

Starting in 1950, records prove that rugged, corrosion-resistant Alcoa Aluminum makes signs last at least twice as long; twice the life means significant savings. Fabrication is cheaper because sign backs need no painting. Handling is easier because aluminum weighs less than half as much as steel. Finally, collision damage is repaired inexpensively by simply flattening signs to their original shape without stripping or refinishing.

Thirteen leading sign manufacturers are ready to help you cut costs as sharply as Charlotte has by supplying finished signs of Alcoa Aluminum—all ready to erect. Call the one nearest you, or write: Aluminum Company of America, 1680-M Alcoa Bldg., Pittsburgh 19, Pa.

*Fasten Aluminum With Alcoa Aluminum Fasteners*

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TELEVISION'S FINEST LIVE DRAMA
ALTERNATE SUNDAY EVENINGS

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**Calaphote Corporation**
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**Gopher Stamp & Die Co.**
78 Chicago Avenue, E.
St. Paul, Minnesota

**The Grote Manufacturing Co., Inc.**
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**The Hunt Company**
18308 James Couzens Hwy.
Detroit 35, Michigan

**Lyle Signs, Inc.**
2720 University Ave., S. E.
Minneapolis 14, Minnesota

**Minnesota Mining & Manufacturing Co.**
900 Fauquier Avenue
St. Paul, Minnesota

**Mulholland-Harper Co.**
5820 Tacony St.
Philadelphia, Pa.

**National Safety Engineers, Inc.**
3910 First Ave., South
Birmingham, Alabama

**Standard Sign & Signal Co.**
470 Main Street
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**Traffic & Street Sign Company**
80 Foundry Street
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**Zumar Industries**
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ALUMINUM COMPANY OF AMERICA

*Your Guide to the Best in Aluminum Value*

# No job or season limitations when communities pick new FWD

Every change of season brings a different kind of highway maintenance job. Different jobs and different terrain—in all kinds of weather. Emergencies are routine for you. The only control you have over these changeable conditions is the rugged power and traction of Four Wheel Drive!

New FWDs are faster and more versatile than ever. They work around the calendar at deep snow plowing, light snow and ice control, emergency maintenance, heavy equipment transport, grading with underbody blade, or hauling gravel and hot-mix. Check the new line of FWD heavy-duty trucks with the rugged power and traction that fits *all* highway jobs . . . because it's four wheel drive!

***Heavy-Duty Vehicle Specialists***

**THE FOUR WHEEL DRIVE AUTO COMPANY** • CLINTONVILLE, WISCONSIN • Canadian Factory: KITCHENER, ONTARIO

*Never-say-die dependability . . .*
*proved on the Alcan Highway!*

*The Alcan test run was supervised and certified by the AAA.*

# NEW TASK•FORCE 57 CHEVROLET TRUCKS

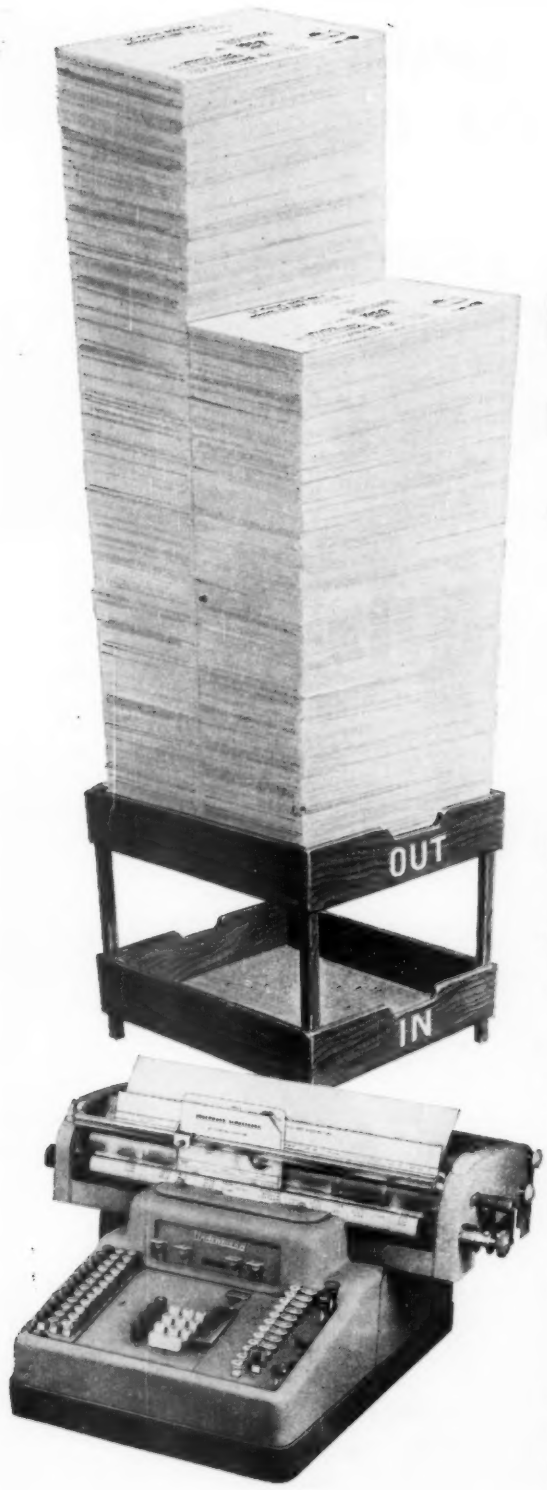
Six new '57 Chevy trucks tamed the rugged Alcan in one round-the-clock sprint. They covered the grueling run (normally a 72-hour trip) in less than 45 hours to prove their durability!

They took everything the truck-killing Alcan could dish out—and not a single unit dropped out or turned back due to mechanical failure! They turned in top scores for performance and economy, too! Look over the Alcan Highway Champs at your Chevrolet dealer's. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

**NO JOB TOO TOUGH FOR THE ALCAN CHAMPS!**

You get Alcan-proved dependability in whatever light- or medium-duty model you choose. Put a new Chevy to work for you and take advantage of its extra stamina, its time- and money-saving ways!

**PROVED ON THE ALCAN HIGHWAY . . . CHAMPS OF EVERY WEIGHT CLASS!** CHEVROLET




# Now—a fast, easy way to meet tax billing deadlines . . . with Underwood Sundstrand Tax Billing Machine!

***Fast?*** Just as fast as fingers can fly over the compact, touch-operated 10-Key Keyboard.

***Easy?*** Even untrained personnel develop real proficiency in just a few minutes! Fully automatic pointing-off, locked-in multipliers and full cent adjustments mean more accuracy, too!

***Versatile?*** In seconds you can switch from Tax Billing to Collections, Delinquency Notices, Appropriations . . . and all other essential accounting jobs such as Water Billing, Payroll and Accounts Payable!

Let us send you full information on the Underwood Sundstrand Tax Billing Machine. Mail the coupon today.

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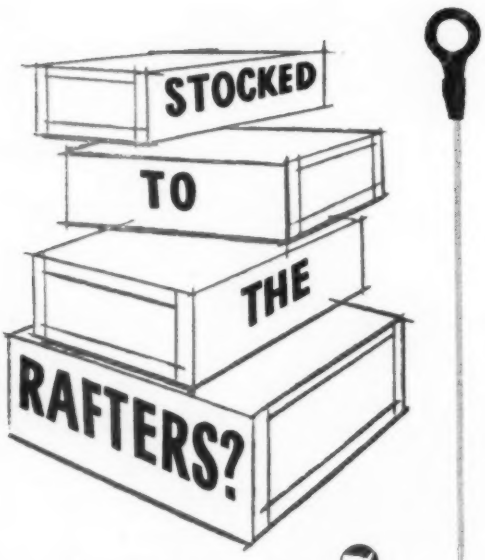


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***API's local service and inventory facilities solve your terminal and tooling stockpiling problems.***

API local service and inventory facilities stock a wide variety of A-MP terminals and tools for your service and maintenance requirements. API inventory and service facilities are as near as your telephone. Call API's nearest branch office for service and expert technical assistance.

*In addition to branch offices, API maintains a group of local telephone information centers for your convenience.*

**api** Trade Mark **dependability 2 ways**

*The product and the product knowledge of the API man who serves you.*

**AMERICAN PAMCOR, INC.**

*Subsidiary of Aircraft-Marine Products, Inc.*

**181 Hillcrest Ave., Havertown, Pa.**

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**Consult the yellow pages of your local telephone directory under AMERICAN PAMCOR INC., for local telephone center number.*

## ELEVATED STEEL TANKS

● Elevated Steel Tanks for water supply, ranging from 5,000 to 2,000,000 gallons—ranging from standard hemispherical self-supporting bottom to spherical tank on tubular tower.

Correctly built in accordance with AWWA specifications. Send us your inquiry, stating capacity, height to bottom and location. Established 1854. Write for *Tank Talks.*

R. D. COLE MANUFACTURING CO. COLE NEWNAN, GEORGIA

**Elevated Tanks, Pressure Vessels, Chemical and Processing Equipment from Aluminum, Stainless and Carbon Steel, Monel and Other Alloys.**

***Established 1854***

**R. D. COLE MANUFACTURING CO.**
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**LIQUID METERS**
**All Sizes All Types**

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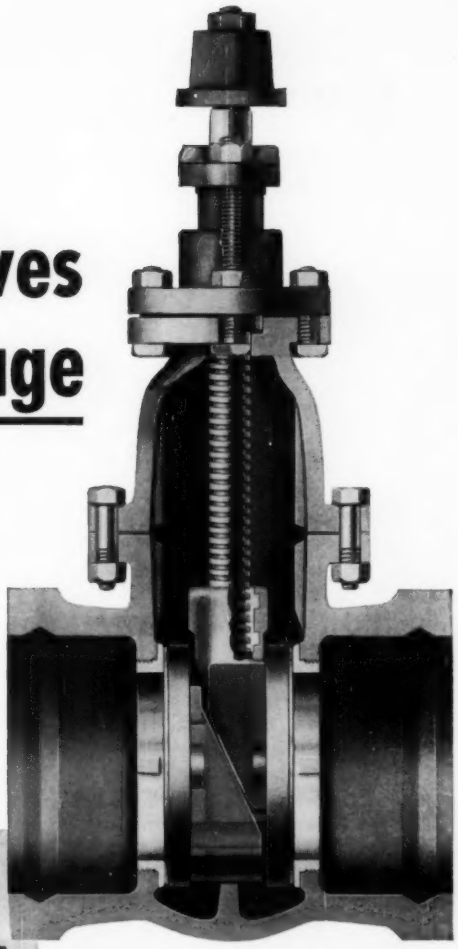
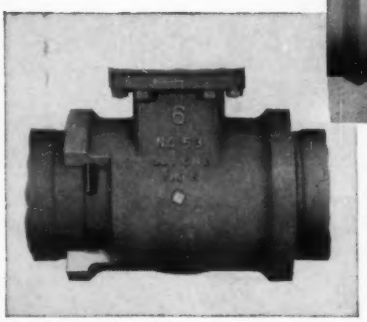
# water works valves offer a 3-star advantage

★ *Outstanding performance*
★ *Long life*
★ *Complete selection*



*Above: Cutaway of Darling Water Works Valve showing unique fully revolving double disc parallel seat principle, noted for long life, minimum maintenance and drop-tight closure.*



*Left: Mechanical Joint and Ring-Tite Joint . . . just two of the various valve ends available on Darling Valves.*

DARLING'S topmost quality plus the Darling *fully revolving double disc parallel seat principle*, gives you an unbeatable combination.

The cutaway view shows Darling's simple gate arrangement with its plain no-pocket discs and wedges. These unique features, greatly lengthen disc and seat life, minimize maintenance and assure easy, tight closure and long life.

Conforming to A.W.W.A. specifications and available in sizes for your particular service, these valves are equipped with ends designed to meet your installation needs.

That's what we mean by a 3-star advantage. For detailed facts, send for Bulletin 5403.

## DARLING VALVE & MANUFACTURING CO.

**Williamsport 10, Pa.**

*Manufactured in Canada by The Canada Valve & Hydrant Co., Ltd., Brantford 7, Ont.*

# HARLEY-DAVIDSON SERVI-CAR

## puts your man "on the spot" . . . fast!

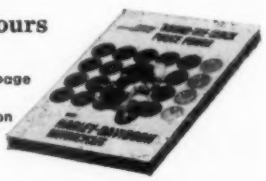
IN addition to being ideal for scheduled "checker" and emergency patrol duty, Harley-Davidson Servi-Cars provide an exceptionally efficient means of coping with scattered, or temporary situations. When equipped with a two-way radio, Servi-Cars give your force outstanding mobility, flexibility.

What's more, the Servi-Car officer is "out in the open" . . . a plainly visible reminder to motorists and pedestrians to observe and obey the laws.

Last but not least — Servi-Cars fit well within equipment budgets . . . are relatively simple to maintain . . . are extremely economical to operate — even on a 24-hour-a-day basis.

**Informative booklet is yours for the asking**

Write or ask your dealer for this 16-page booklet — "More Effective 'Round the Clock Police Power with Harley-Davidson Motorcycles." HARLEY-DAVIDSON MOTOR CO., Milwaukee 1, Wisconsin.



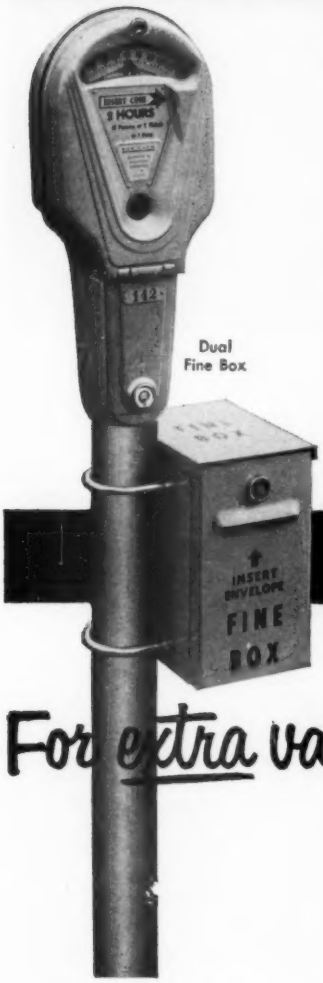
**HARLEY-DAVIDSON police motorcycles**

Dual Automatic

Dubl-Dual Automatic

Dual Manual

## For every parking control need there's a DUAL...




Dual Fine Box

Dual Park-Ateria

## that's just right

• Yes, shown here are the basic Dual units ideal for *any* on-street or off-street need . . . Single and Dubl-Duals . . . automatic and manually operated Duals . . . the Dual Park-Ateria . . . and Dual fine boxes . . . all convert parking overhead into profits.

All have one thing in common—mighty important to you—the quality and leadership engineering that always pays off in *efficient* control, long life, minimum maintenance and *highest* net return on investment. Be sure to get *all* the facts. Write *The Dual Parking Meter Company* (Subsidiary of Rockwell Manufacturing Company), *Canton 2, Ohio.*

## For extra value get DUAL PARKING METERS

# THE MAN WHO SAID *"No!"*

He's a business man looking for a place to build a new plant . . . a plant that will bring prosperity and growth to the community he chooses. Water supply is one of the most vital questions, and many a golden opportunity has been lost by a community because its water system is inadequate.

In Plattsburgh, N. Y., the story was different. Wasteful habits were causing water shortages, so Plattsburgh decided to install water meters. As a result, they "found" 1,400,000 more gallons daily . . . enough to supply a new Strategic Air Command Base now located there.

Even communities who have had meters for many years . . . but have allowed them to run down . . . can "find" more water simply by repairing the meters.

These savings are *real*. The meters give a strong money incentive for conservation. They help keep wells and reservoirs from running dry. The same filter plants and water mains may serve up to twice as many customers . . . with lower daily operating costs.

Your Neptune Trident meter representative will be glad to offer further evidence.

879

**NEPTUNE METER COMPANY**
19 West 50th Street • New York 20, N. Y.

**NEPTUNE METERS, LTD.**
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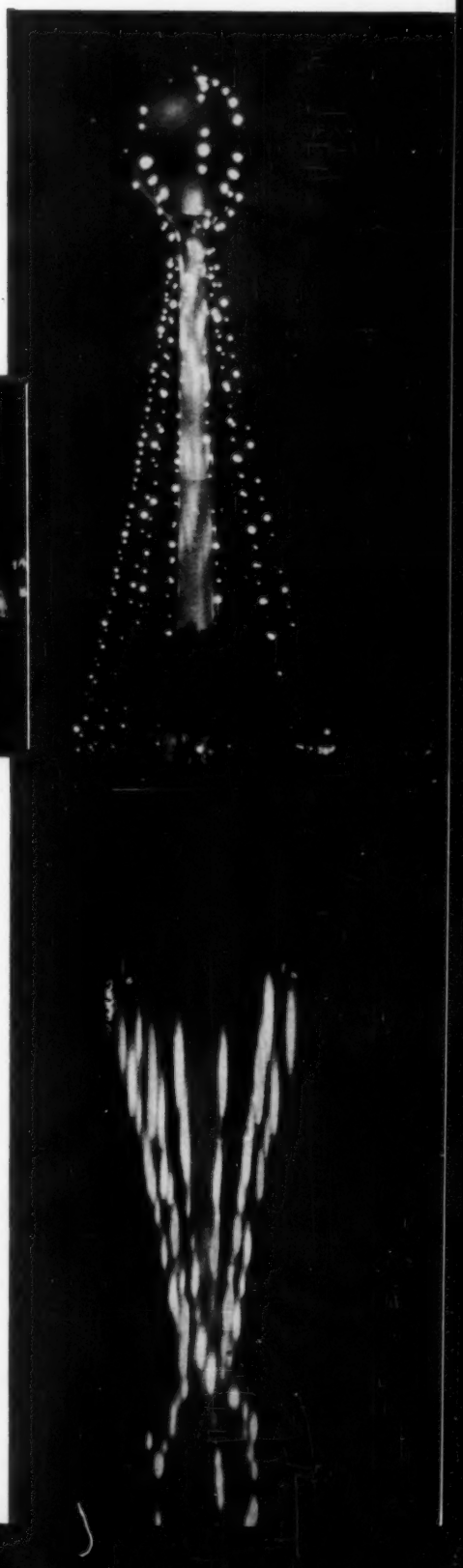
*Branch Offices in Principal American and Canadian Cities.*

neptune

# Water Tower Turns Christmas Tree

*New Smyrna Beach, Fla., uses an elevated water reservoir for focal point in Christmas decorations*

By JOHN C. FERRIS
*City Manager*
*New Smyrna Beach, Fla.*



**While the lighted Watersphere casts its reflection in the calm surface of the Indian River, the city hall carries its share of decorations for the Christmas season.**

OTHER cities often try to hide their elevated water tanks; we in New Smyrna Beach use ours as a center of attraction. Our 100,000-gallon Watersphere, built by the Chicago Bridge and Iron Company, is located in the midst of our historic Old Fort Park. When the Christmas season comes around we turn it into a lighted decoration that can be seen from a distance of 9 to 10 miles.

The park is located where ruins still remain from the days of the Spanish conquistadors. The spherical shape of the elevated tank blends with the attractive landscaping of our park in a way that has commanded favorable comment from local residents and visitors.

At Christmas time this water tower seems to be transformed. Around the first of December as Santa arrives by boat to visit the children in this city, variegated colored lights also appear on the Watersphere. Streamers of lights reach around the sphere portion of the tower to form the top of the "tree," and from the base, long rows of brightly colored bulbs flow groundward to form the tree limbs. Our artificial Christmas tree is 154 feet tall. Approximately 720 lights glitter like a diadem in the night where only a red beacon light used to show. This beautiful spectacle is reflected in the peaceful waters of the nearby Indian River.

Fishermen at sea and travelers entering this city by land and air can see this brightly lighted emblem of the season as far as 10 miles away.

Many other decorations adorn the city each year with streamers of colored lights running across the city streets on both the mainland and beachside. The city hall is lighted as is the War Memorial in Riverfront Park with its traditional blue lights. Elsewhere throughout the city we use over 5,000 lights to honor the season in a way that we feel creates an inspiring sight.

In Fairbanks it is necessary to thaw permafrost before sewers can be excavated.

***Fairbanks, Alaska, on the Arctic Circle, tells how to build and operate . . .***

# *Sewers in Permafrost*

By M. W. SLANKARD
*City Manager*
*Fairbanks, Alaska*

OBVIOUSLY, every city needs sewers. The fact that a city may lie in an area troubled by permafrost cannot negate this principle. A city's task is to overcome this obstacle to bring sanitation to the people it serves. Since more cities are bound to arise in this invigorating and stimulating part of our country, we feel that a description of the way Fairbanks solves this intriguing problem would be helpful.

Permafrost, as most know, means permanently frozen ground. Over the ages, spanning a period of time so great that the entire history of man on earth would occupy only a negligible portion, the winter cold has frozen the ground to great depth. The summer heat thaws only a small upper portion. To indicate how old this frozen ground is, gold miners have uncovered the remains of mastodons and small prehistoric horses in it.

## Permafrost Problems

Permafrost is a problem to construction men. Foundations sunk in it will melt the frozen ground and cause any structure to tilt and settle. A road built across permafrost will also melt the ground and cause it to become a muddy trough.

Obviously, there is no digging "below frost" as is the practice in the rest of the country. Nevertheless, we have to build both water and sewer lines in the frozen ground and operate them in a way that will prevent their freezing during the winter months. The manner in which we operate the water distribution system has been described previously.* This article will describe our sewer system.

## Wood-Stave Sewers

First, we use wood-stave, wire-bound pipe instead of concrete or clay. The pipe is, in effect, "refrigerated" by this permanently frozen ground, and does not deteriorate. Tree limbs buried in the ground for many years have been uncovered and found to be in as good condition as they were when buried.

Next, we have to thaw the earth, prior to digging. Fairbanks is located at the edge of a large tundra, or wet-moss and shrub-covered plain. The earth is sandy down an estimated 4 or 5 feet. In many instances, the next 100 feet is solid frozen silt. At 10 feet, if the ground is not frozen, we encounter water and have to dig ditches some 10 to 12 feet wide at the top to prevent a cave-in.

## Thawing

To thaw the ground, we use boilers of the Cleaver-Brooks type with an operating head of 125 pounds of live steam. They are fired by fuel oil and consume 112 gallons of oil each, in an 8-hour period. Water is heated and stored on each unit. Each boiler uses somewhat more than 1,300 gallons of water per 8 hours.

When doing the digging, we have to equip the trenching equipment with special, forged teeth. We frequently use a Parsons trencher, and, to show how difficult the digging is, often it can excavate no more than 25 or 30 lineal feet in an 8-hour shift. During the past season, 10 such units were operating at the same time.

## Short Season, Long Days

The construction season is short, from May 15 to October 15. The first and last 15 days are questionable because of uncertain weather. Actually, we have only four reliable months.

On the credit side, however, is the fact that we can work around the clock. The sun rises at approximately 2:00 a.m. and sets about 10:00 p.m., giving us enough light to work through the "night." The

* See "Sub-Arctic City Moves Forward" in the December 1954 issue of THE AMERICAN CITY, p. 80.

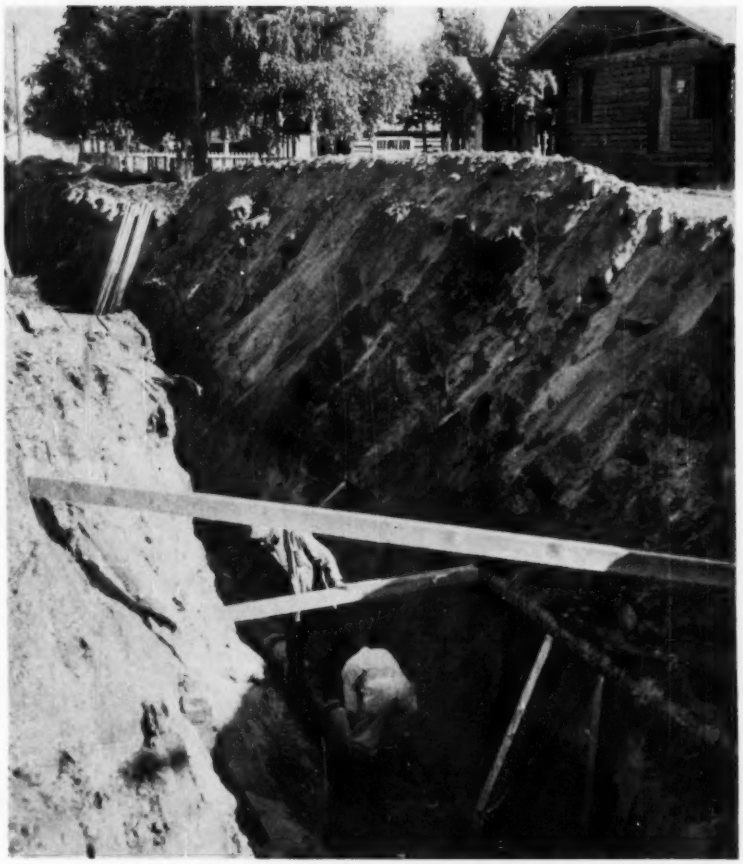
summer weather is warm, averaging about 70° F. to 75° F. The mercury soared to 93° F. last summer.

Last summer we completed seven sewer projects. The largest of these consisted of 18,500 feet of new lines costing $434,300. Another project included a booster pumping station and 17,168 lineal feet of line costing $270,582. A third consists of a main sewer outfall line and the completion of a sewage booster station costing $190,000. The four remaining sewers will cost over $100,000. In all, Fairbanks invested nearly a million dollars in sewers and pumping stations.

### Maintenance Problems

Maintenance of these sewers presents its own set of problems. If the sewage does not flow steadily, it will gradually freeze, and the ice by morning will fill the entire pipe. At 50° below zero, sewage will freeze in the manhole even though the tops are of wood and covered with a foot of earth or paving.

To correct this, the city uses the same five Cleaver-Brooks boilers mounted on trucks. A crew forces live steam under pressure from one manhole to another, thus thawing the ice formed in the ground. The greatest number of these problems occurs in February and March, just before the warm weather sets in.



After the trench has been opened, the sewers are promptly placed and covered.

### Normal City

In all other respects, Fairbanks is a perfectly normal American city. It has paved streets, two apartment buildings exceeding eight stories, two television stations, two radio stations, and the regular run of stores and shops that any city of 10,500 would have. In addition, close by is Alaska University, a very fine scientific school.

Fairbanks operates its general government on an annual budget of $1,997,000. The city owns and operates its own municipal electric, water, and steam plants, and telephone system.

Last year, the city installed a new extension to its water system, consisting of 73,000 feet of new pipe. Other new projects are on the drafting boards for next year, totalling nearly 33,000 feet of line, and also additions to the water filtration plant. The utilities show a profit even though they have to meet bond and interest payments exceeding $526,000 per year. The electric plant has two 2,500-kva steam turbines and one 5,000-kva unit. Steam that passes through the turbines is piped to the downtown area to heat the business houses.

A truck-mounted boiler does the thawing; also keeps sewers open in winter months.

### Revenue

The city has a 2% consumer sales tax that brings some $700,000 in revenue each year.

The city operates with an elected mayor and six councilmen elected at large. It has a council-manager form of government.

Horse-drawn side dumps and truck-tractor-drawn trains marked the onset of mechanized garbage-collection service in the city.

# Progress Is the Key

***Milwaukee documents its 46-year history of incineration, and its refuse-collection system, from wagons to packer-type trucks***

By BERNARD J. GEISHEKER, *Superintendent*
*Bureau of Garbage Collection and Disposal*
*Milwaukee, Wis.*

Although primitive, this horse-drawn wagon with its 2-cubic-yard demountable watertight box did pick up garbage from the doors of Milwaukee householders.

FOR well over 50 years, Milwaukee's city fathers have been vitally interested in giving their householders the most modern and convenient type of refuse collection and disposal service at minimum cost. It takes continuous study to determine the best methods available and an ever-watchful eye for new developments in equipment, not only to speed the collector's task but also to erase as much as possible the stigma of public nuisance from collection vehicles.

The city turned to incineration for the first time in 1910, using a Heenan Destructor having a 24-hour burning capacity of 300 tons. This plant attracted nationwide attention for many years because of its ability to generate electric power from waste heat.

Up to 1923, the city collected garbage by means of horse-drawn wagons, each equipped with a demountable 2-cubic-yard watertight box that could be raised to the overhead storage and charging floor and emptied by means of an overhead traveling crane.

The swing toward mechanization began in 1923 when the city got off to a good start by replacing 431 collection wagons with 70 side-tipping

*Above.*
**Here is a portion of Heil Colecto-Matic packer-type garbage-collection units, all of which are mounted on International trucks.**

**City officials had every right to smile, for this was a "red letter day." Delivery of the fully-enclosed collection units permitted retirement of the last horse-drawn vehicles. From left to right are: Walter M. Swietlik, commissioner of public works; the Honorable Frank P. Zeidler, mayor of Milwaukee; John W. Tanghe, deputy commissioner of public works; Harry R. Steidemann, superintendent of Bureau of Municipal Equipment; and Morris Oesterreich, superintendent of Bureau of Garbage Collection and Disposal. Messrs. Swietlik, Tanghe, and Oesterreich have now retired, and have been succeeded by Lloyd D. Knapp, Walter H. Tacke, and Bernard J. Geisheker, respectively.**

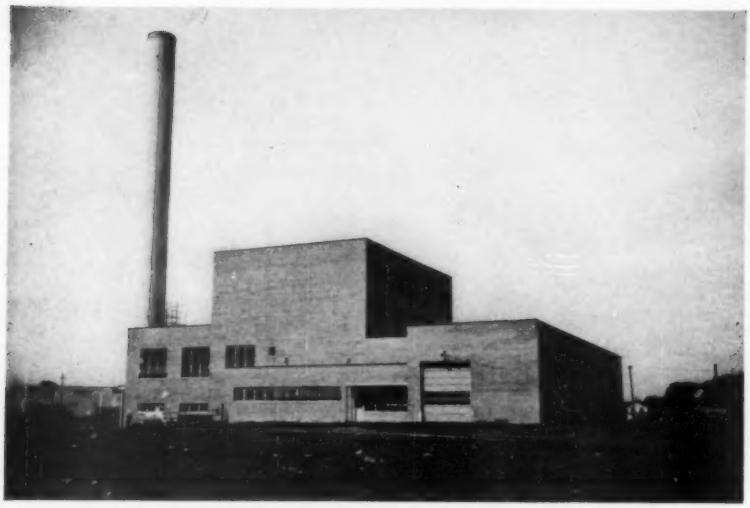
solid rubber-tired steel trailers. A team of horses pulled each trailer during the loading period only. Seven 5-ton truck-tractors, capable of pulling trains of three or four loaded trailers made the long haul to and from the incinerator. A dump truck collected garbage in the downtown commercial area. In the same year the city inaugurated a four district collection system utilizing 38 to 49 routes, depending upon the season. A field supervisor directed the work in each district.

When the Bureau of Garbage Collection and Disposal was established in 1923 it assumed removal responsibilities from the Bureau of Street Sanitation. Several years later the new Bureau increased production considerably by introducing a shuttle system. This system permits trucks to operate continually and eliminates idle periods for collectors who formerly had to wait for empty trailers to proceed with their work.

During the late "twenties" the volume of material delivered by city garbage-collection crews and commercial haulers began to overtax Milwaukee's single incinerator. Responsible authorities took immediate action and ordered the construction of a second incinerator. This plant, placed into operation in 1930, had a rated capacity of 225 tons per 24 hours. The new unit did not include steam boilers and turbine-propelled generating equipment, for the prevailing low rates for electric power made such an installation economically impractical. Also, the old style overhead storage and charging floor gave place to storage pits accessible from ground level.

The year 1948 saw the completion of the "swing" to mechanized collection. The purchase of 52 fully-enclosed packer-type units of 12-cubic-yard capacity permitted the retirement of all the horse-drawn trailers and tractor-drawn trailer trains. The new Heil Colecto-Pak overhead bucket-loading bodies were mounted on GMC cab-over-engine trucks.

The city also expanded its collection system from four to seven districts. A collection crew now consisted of a driver and from two to



**The new incinerator presents a striking contrast to the one constructed in 1910.**

three laborers, depending upon the characteristics of the route. The department worked a two-load-per-day schedule, giving lunch periods to collectors during the first trip to the incinerator.

### Additional Incinerators

With the city's annexation program going at top speed and its population increasing by leaps and bounds, the need for additional incineration capacity rapidly manifested itself. Added to this, was the scarcity of available dump sites for future disposal of both combustible and noncombustible rubbish. As a result, the city fathers decided to construct additional incinerators for the disposal of all garbage and combustible rubbish. The proposed program called for several high-temperature installations equipped with mechanical stoking devices and adequate air-pollution control facilities, all to be housed in buildings of pleasing and appropriate design.

To date, the first two of the three units presently programmed have been all but completed. The north side, or Green Bay Avenue incinerator, has a rated capacity of 300 tons in 24 hours. It is the pit-and-crane type, equipped with circular furnaces and water spray fly-ash removal equipment. The city accepted the installation and placed it into service in February of 1954. It was built by Nichols Engineering and Research Corporation. We converted the collection system for the new north-side incinerator (40% of the city) by requiring the householder to separate combustibles from noncombustibles.

The south-side incinerator, now nearing completion, is also of the pit-and-crane-type rated at 300 tons per 24 hours, but contains rectangular furnaces with inclined rocking grates. The Bureau plans to complete the conversion of the collection system for the balance of the city when the south-side unit is placed into operation. When this takes place, all domestic produced garbage and combustible rubbish from the entire city will be destroyed by incineration, and only nonburnable material will be disposed of by controlled open dumping.

Programmed for 1961 is a third new incinerator to be located on the west side of the city. This installation will have sufficient burning capacity to handle a considerable portion of the material produced by householders in the area and also dispose of all combustible waste material produced by the city's industry. In addition, the new unit will have the necessary standby facilities to take care of mechanical failures or planned shut-downs at the other installations. Present plans call for the dismantling of the two old incinerators as soon as the third new unit is completed. At that time, the Bureau will also give serious thought to the possibility of adopting one collection system for all household waste material except ashes and yard or garden dirt. These materials would then be collected separately during the appropriate season of the year.

The Bureau at present employs between 80 and 85 collection vehicles, the actual number depending upon the work load. Eight supervisory districts are now utilized. Approximately 110 packer-type trucks will be required when all of the householder-produced garbage and combustible rubbish is collected together. When this occurs, it is planned to increase the number of districts to 12 and to assign three collectors to most routes to obtain maximum efficiency from the equipment.

### Vehicle Replacement

The Bureau is now replacing the collection equipment purchased in 1948 as rapidly as possible. These units are of the overhead bucket-loading type, and while admirably suited for the collection of garbage, they are ill-adapted for the handling of dry combustible material of a resilient or "springy" nature. Such material comprises about 70% by weight of the mixed garbage and refuse collected from the householder.

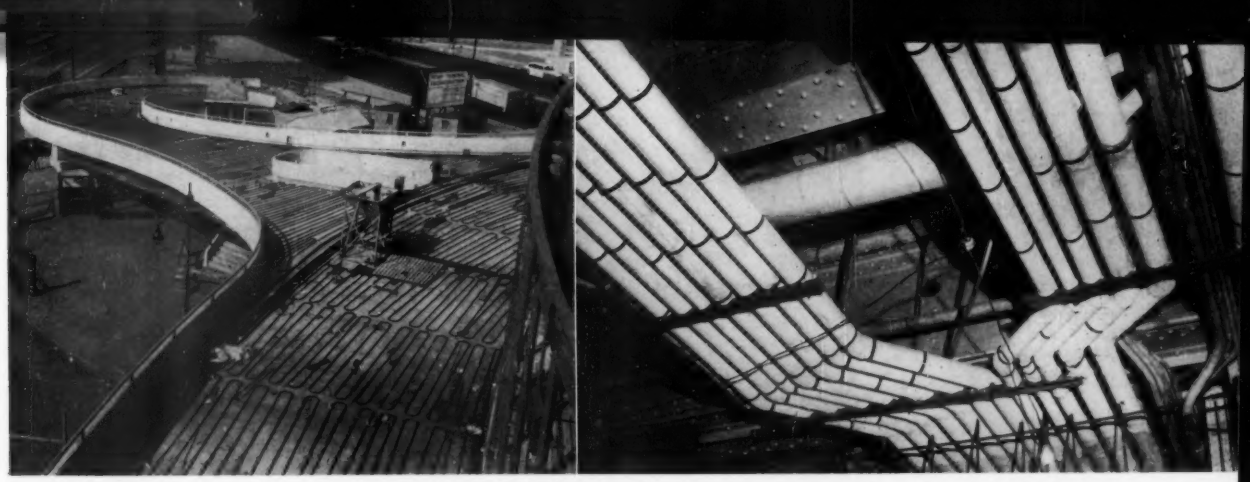
Present indications point to the replacement of all the older packer-type vehicles by the end of 1958. The new collection vehicles will all be of the pressure-retaining type, of 15-cubic-yards capacity, and of the rear-loading variety. Approximately 10 collection vehicles may be of 20- to 24-cubic yard capacity to permit operation in the fringe or sparsely settled areas of the city on a one-load-per-day basis.

The city is at present taking positive action in an earnest effort to consolidate all waste-collection and disposal activities under one major bureau. This will result in increased flexibility and greater efficiency in the utilization of manpower and equipment, thereby producing higher quality of service at less cost. Such a long-desired improvement is possible only when all administrative details are handled by, and all operational policies emanate from one departmental head.

## *Aid for the Smoke Inspector*

AIR POLLUTION INSPECTORS in Allegheny County area no longer will have to guess whether smoke stacks are violating ordinances. Each has been supplied with the new Smokescope, produced by Mine Safety Appliance Company, to take the guesswork out of reading smoke density.

The new Smokescope carries the approval of the U. S. Bureau of Mines, and was produced after careful research in which the Allegheny County Bureau of Smoke Control cooperated.



Seven grids make up the operational zone of the ferry terminal snow-melting system. Both the supply and return piping running through the unheated passageways are insulated with 85% Magnesia sectional insulation, as is the steam main from the boiler room.

## *Whitehall Ferry Terminal*

# *Features Snow Melting System*

THE Manhattan Terminal of the Staten Island Ferry system is fully exposed to the snow and frigid winds of New York Harbor. To promote public safety and eliminate snow and ice removal problems, the Department of Marine and Aviation, City of New York, incorporated a modern snow-melting system in the design of the new terminal facilities. The system serves the entire outer concourse around the periphery of the new second-floor waiting room, the entire ramp descending to the street level, and the exposed public stairway from the ramp to the street level.

Major components of the system include a convertor, two pumps, compression tank, piping, valves, and automatic controls. "Heat transfer oil light," as manufactured by Socony-Vacuum Company, serves as the heating medium.

Manual starting of either of two Weinman snow-melting pumps places the system into automatic operation. Low pressure steam (5 psi) from the central boiler plant is admitted to the Yula Company convertor through two automatic steam valves controlled by a Johnson Service Company submaster thermostat in the supply "heat transfer" oil line flowing to the snow melting coils. The thermostat setting is automatically reset by a timer to gradually raise the supply "heat transfer" oil temperature in the convertor from its starting temperature to a maximum setting of about 170° F at an adjustable rate of from 10° F to 20° F per hour. This is done to limit thermal stresses in the slabs containing the piping.

Each pump is rated at 188 gpm against a total dynamic head of 133 psi. Fifteen horsepower, 3,500 rpm motors drive the pumps through flexible couplings.

Fourteen tons of steel pipe carry the hot oil through the snow-melting grids covering an area of approximately 18,500 square feet. About 5 tons of pipe varying in size from 1½ to 2½ inches in diameter carry the heated oil through unheated passageways to the seven grids that make up the system. These pipes take off from a 6-inch header.

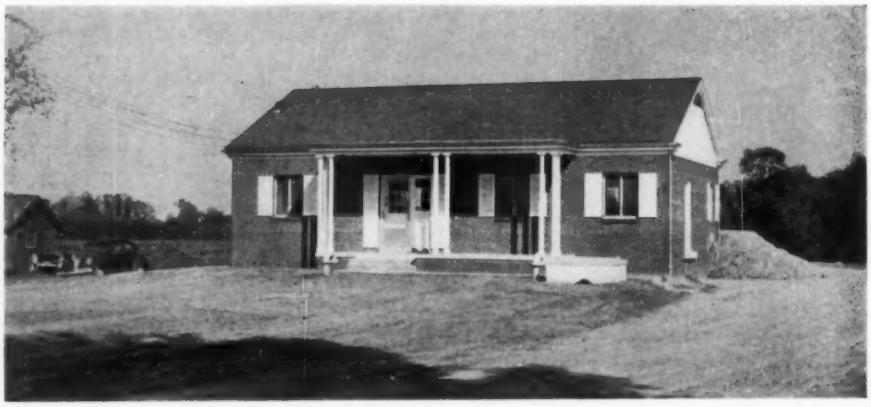
Insulation of the oil supply lines and steam headers running through the unheated passageways plays an important part in controlling heat loss.

Nominal 1-inch thick 85% Magnesia sectional insulation covers the oil supply lines connecting the heat exchanger to the grids. The 10-inch, 320-foot steam main from the boiler room to the convertor is insulated with 1½-inch-thick 85% Magnesia.

The return oil lines are also insulated to conserve any remaining heat in the oil thereby reducing steam requirements from reheating.

The convertor is of all steel construction of the shell and tube type, with removable 2-pass tube bundle with 602 square feet of ¾-inch outside diameter steel tubing. Coils are fabricated from National Pipe Company standard weight black steel pipe with all-welded joints.

Snow-melting coils cover about 18,500 square feet of ramp and concourse surface.



Deerfield's new water plant adds to the residential character of the neighborhood.

# *Deerfield Taps the Raisin River*

***A little community replaces a dwindling well supply with a river supply and treatment plant having big-city characteristics***

By ROBERT B. JUERGENS
*Finkbeiner, Pettis & Strout*
*Consulting Engineers*
*Toledo, Ohio*

DEERFIELD, Mich. (population 750), is located on the banks of the Raisin River about 25 miles northwest of Toledo, Ohio. The village is one of the trading centers of agriculturally rich Lenawee County and the home of Revco Company, manufacturers of freezer units. Revco has approximately 625 employees and uses about 70% of the village water output.

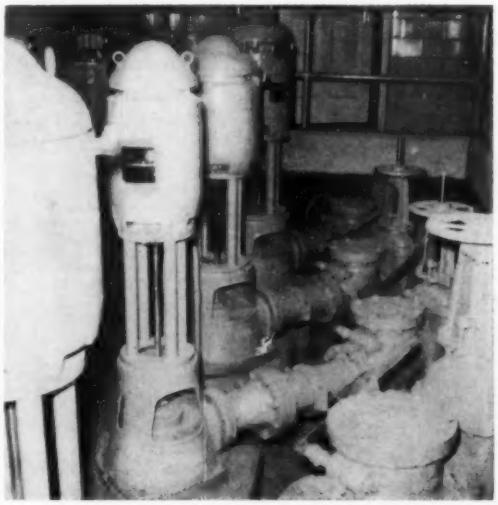
For almost 20 years, Deerfield relied on a well supply to satisfy its water requirements. The first water system consisted of one well, a distribution system, and an elevated tank, and was constructed in 1936 at a total cost of $31,157. A second well was drilled in 1945 and a third in 1947, each costing $5,000.

### Short Supply

The yield of the three shallow wells was determined to some extent by the river water level, and during periods of high summer demands, it became necessary to pump river water onto the surface of the well field to increase the well yield.

From 1945 to 1950 the per capita consumption rose from 32 to 50 gpd. This increased demand, plus a gradual decline in well yield, caused considerable concern among the village authorities regarding future requirements and the ability to meet them. Consequently, in November 1951, the village engaged the consulting firm of Finkbeiner, Pettis & Strout of Toledo to study possible future water supplies and report their findings and recommendations. During this period, the village found it necessary to haul water from a nearby community to supplement the well supply.

The report, submitted in February of 1952, recommended construction of a treatment plant and the utilization of the Raisin River as a source of supply. A supplemental report issued in May of that year discussed a joint treatment plant to serve both



*Left.*
Three high service pumps and a wash water pump take suction directly from the clear water reservoir.

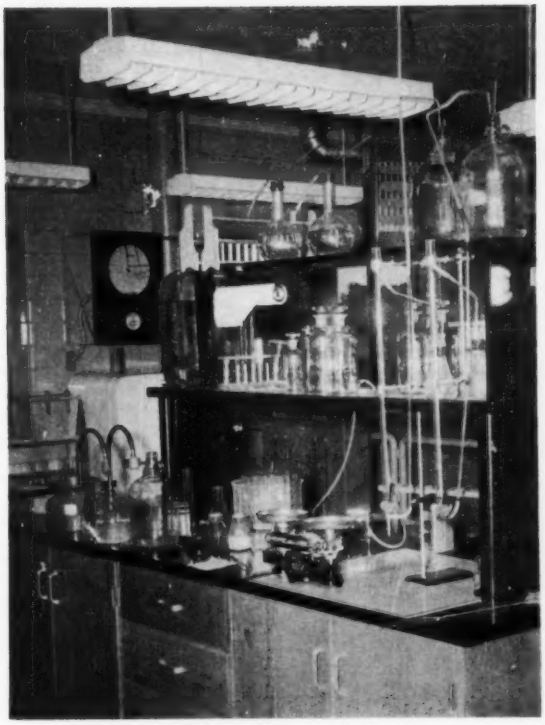
*Right.*
A view of the compact plant showing the dry chemical feeders and power drives for flocculator (right) and flash mixer (center).

Deerfield and the neighboring village of Petersburg as well as the territory between the two communities. However, Petersburg (population 1,000) felt the cost of the 4-mile-long transmission main connecting the two villages was prohibitive. Thus Deerfield undertook the project on its own and negotiations were made with Revco for water rates and terms of payment for that large water user. The village authorized the preparation of plans and specifications in August of 1954; contracts were awarded early in 1955.

The construction program was divided into two sections: Section A—Water Treatment Plant; Section B—Water Mains. Dale S. Lapham, Maumee, Ohio, turned in low bids of $144,322 and $4,755, respectively, for the two sections and was awarded the contracts.

The plant is designed to process 100,000 gallons in 8 hours with a maximum production of 0.3 mgd (million gallons daily) to accommodate 1980's estimates.

Raw water enters the low service pumping station wet well through a 12-inch cast-iron intake line. This line, provided with a strainer and encased in concrete, lies in the deepest part of the river bed. Two Deming pumps transfer the raw water from the wet well to the treatment plant through a 10-inch cast-iron main. The vertical low service pumps are rated at 104 and 208 gpm, with only one pump operating at any given time. The pump selected for use is determined by whether one or two filters are in operation. The low service pumping station is constructed of reinforced concrete and the suction well is designed to hold 10,000 gallons at average river-level.



**Routine tests are conducted in the fully-equipped laboratory.**

A manually operated S. Morgan Smith butterfly valve controls the flow of water through the rapid-mix basin which is 5 feet wide, 5 feet long, and 5 feet 8 inches deep. A 60-rpm propeller-type mixer mixes the lime and alum with the water for five minutes at a maximum flow of 208 gpm. Dry chemical feeders were supplied by Omega Machine Company, division of B-I-F Industries, Inc. Prechlorination also takes place in the rapid-mix basin.

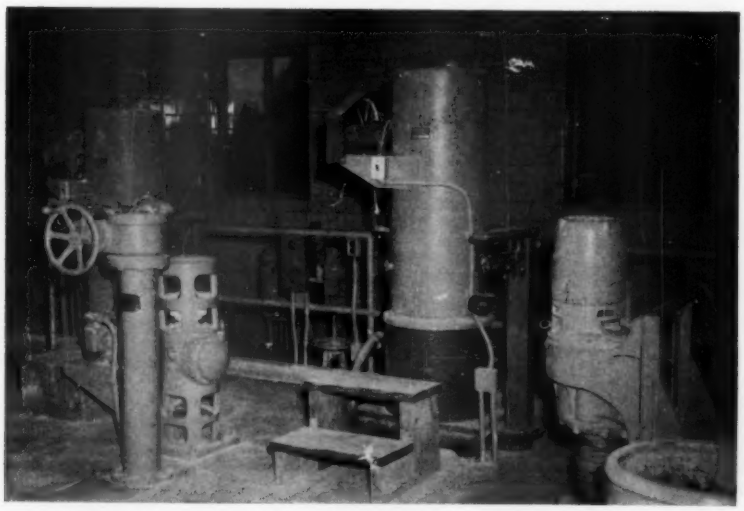
Two flocculation basins, each 7 feet wide, 7 feet long, and 12 feet deep, provide a total detention period of 40 minutes at design flow. The vertical-type mixing paddles have a peripheral speed of 3.5 feet per second.

### Two Filters

From the flocculation basins the water passes through ports to the sedimentation basins. The two basins, each 10 feet wide, 29 feet long, and 12 feet deep, are designed for either series or parallel operation and provide a total detention time of four hours. Chain Belt Company supplied the sludge-removal mechanisms for the settling basins and the mixing mechanisms in the flocculation chambers.

Next comes filtration. The two units, each 7 feet wide, 8 feet long, and 7⅔ feet deep, are of Wheeler-bottom construction and are designed for an output of 100,000 gallons in 8 hours based on a rate of 2 gallons per square foot per minute. Backwash of the filters is rated at 15 gallons per square foot per minute and is provided by an 840-gpm Deming wash-water pump. Builders-Providence Division of B-I-F Industries, Inc., furnished the Wheeler filter bottoms rate-of-flow controllers and gages; Republic Flow Meters Company supplied the high service and wash-water flow meters.

The filtered water flows to a transfer well and is then pumped to the



50,000-gallon clear-water reservoir. Two Deming pumps, rated at 104 gpm and 208 gpm are used for this purpose. Post-chlorination is introduced into the filter effluent pipes prior to the transfer well. Everson Manufacturing Company supplied the chlorinator used for both post- and prechlorination.

Three Deming vertical-type pumps furnish water to the village mains and to the 75,000-gallon elevated tank. The 100-, 200- and 300-gpm high service pumps and the wash-water pump take suction directly from the reservoir containing clear water.

The treatment plant, constructed of reinforced concrete and brick, has a superstructure resembling that of a residence to fit the surrounding community. Besides the mechanical equipment, the building houses a fully equipped laboratory. Kawaunee Manufacturing Company supplied the laboratory furniture, and Kauffman Lattimer Company the equipment.

Mechanical joint cast-iron pipe was furnished by James B. Clow & Sons; Traverse City Iron Works supplied the flanged pipes and valves. The sluice gates were manufactured by Chapman Valve Company and Automatic Control Company supplied the equipment for water level control.

To pay for the improvements, the Village of Deerfield issued $75,000 in revenue bonds and $115,000 in general obligation bonds.

Water charges are made on a quarterly basis. The minimum charge is $7.50 per quarter for 6,000 gallons or less. The next 19,000 gallons runs $1.10 per 1,000 gallons, and all water used over 25,000 gallons cost $1 per 1,000 gallons.

The work was under the over-all supervision of Carleton S. Finkbeiner, project partner; Joseph D. Pavia, resident engineer; and the author, project engineer. Percy Alverson, is Mayor of Deerfield; James Ramsey is in charge of the Water Department.

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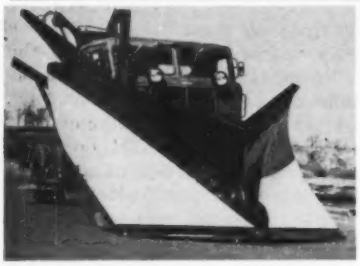


**Two Sicard snow plow trucks owned by the City of Quebec. The V-plow at the left is for cleaning the 24-inch falls that may hit Ottawa or Quebec without warning once three or four years. Quebec City owns 14 triple-purpose, 10-cubic-yard Sicard plow trucks, like that above, which haul, plow, or scrape. The blade under the truck can be an ice-cutter with saw-like teeth or a scraper blade with straight edge for snow use.**

# *Canada Reports on Snow and Ice Removal*

WHEN it comes to controlling snow and ice there could hardly be a better teacher than Canada. The Canadian Good Roads Association has questioned every Roads Department in the ten provinces of Canada on this subject.

They all use snow blowers and trucks. Six of the ten provinces use motor graders, and only Newfoundland reports the use of bulldozers. Half of the provinces receive no advance weather reports and half of them put equipment to work at the start of a snow storm; the others when the fall is 6, 2 to 3, 2, 4, and 4 to 6 inches deep.

Only Manitoba and Newfoundland use no salt. Of the 8 provinces which use sodium chloride, 4 apply it at the beginning of the storm; New Brunswick, "after snow removable"; 5 provinces "when slippery conditions occur." None use a rust inhibitor. During a severe sleet storm 2 provinces use clear salt. These 2 and 4 others use salt and sand—about 100 cubic yards per mile.

The preferred method of application is by spreader. Eight provinces want bare pavement for full width on heavily traveled roads, with Prince Edward Island and Saskatchewan satisfied with the center bare.

Frequent weather reports are used to warn the public of weather and road conditions in 7 provinces. All but two of the ten provinces use the weather reports in planning the removal of ice and snow to come.

All the provinces employ departmental forces and all have crews standing by continuously. Manitoba is looking into the use of clear chemical. British Columbia and Saskatchewan always investigate equipment.

| ***Are chlorides injurious to:*** | Yeses out of 10 Provinces |
|---|---|
| Concrete bridges | 5 |
| Concrete curb, sidewalk | 4 |
| Bituminous pavement | — |
| Less damaging to air-entrained concrete | 1 |
| ***Is there increased use of:*** | |
| Chlorides clear | 6 |
| Abrasives treated | 8 |
| Mechanical equipment | 8 |

Sewage from the River des Peres foul-water sewer first passes through a series of settling tanks before being pumped to a large combined sewer. The large concrete slabs show the sewer location under the river channel.

# *Foul-Water Pump Stations Relieve Overflow Conditions*

***Infrequent operation dictates fully automatic controls requiring a minimum of operating personnel***

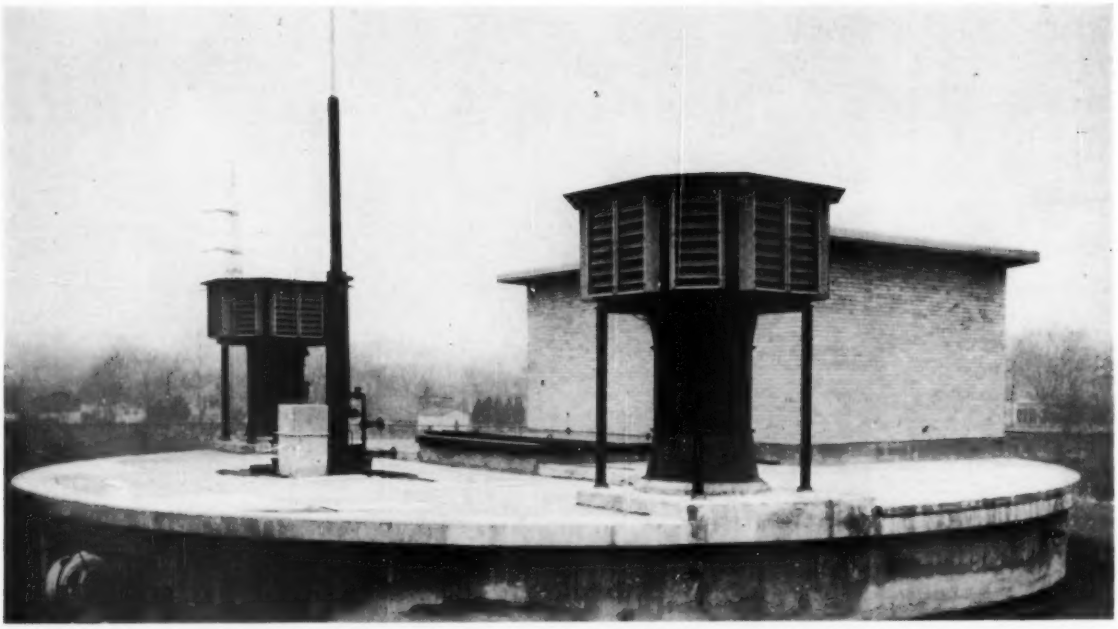
By FRANK J. McDEVITT
*President*
*Board of Public Service*
*St. Louis, Mo.*

THE Mississippi River can be considered a great asset to the City of St. Louis, Mo., but liability also rears its ugly head. One example of the latter appears whenever the river reaches flood stage and backs into a large trunk sewer located beneath the des Peres River channel. This causes the sewer to overflow into the channel and to deposit particles of sewage in the channel bottom. During dry weather, the solids decompose, causing foul odors to rise from the channel bed.

But this situation has now been remedied by the construction of two sewage pumping stations. Station No. 1 relieves the sewer at its upper reaches and Station No. 2 converts the lower portion of the sewer into a force main, pumping the sewage into the Mississippi against the heads produced during flood stage.

Originally, the two stations were to be included in a civic improvement program and financed by a 1944 bond issue. At that time the city engaged the firm of Horner and Shifrin, Consulting Engineers of St. Louis, to study conditions and prepare a report of their findings. The firm later prepared detailed plans and a cost estimate covering construction of two pumping stations, a diversion sewer, and changes to several interceptors.

Although plans and funds were available, the city took no further action. At the time the present administration took office in 1949, the situation was aggravated. Many new homes were being constructed in



**Simplified superstructures and reduced costs permitted construction of both stations with alloted funds. This is a view of Station No. 2, a coordinate remedy for overflow conditions, showing the ventilating systems and the stem of the sluice gate.**

the River des Peres area and the residents complained bitterly. To make matters worse, post-war inflation increased costs to such an extent that only the lower station could be constructed with the available funds. Yet both stations were needed to effect a solution.

The problem was restudied with the specific idea of reducing costs wherever possible. We cut space requirements to a minimum, redesigned the station superstructures, and made changes in the equipment. Automatic controls were used to reduce operating labor to a minimum. As a result, the city constructed both stations and the diversion sewer with the funds originally allocated. Total cost of the entire project came to about $2,500,000.

### Upper Station

Station No. 1, which is located toward the upper reaches of the River des Peres foul water sewer, has as its prime purpose the relief of the lower portions of the sewer. This is done by pumping some of the sewage into a neighboring combined storm and sanitary interceptor. Since no pumping is required during periods of rainfall, the combined sewer has ample capacity to handle the additional flow.

The sewage first flows through a series of settling tanks before reaching the pump inlets. Here the large inert particles settle out and are later removed. Three 36-inch Worthington vertical pumps then transfer the sewage to the combined sewer through a 78-inch-diameter reinforced-concrete force main. The pumps operate against a constant 60-foot head.

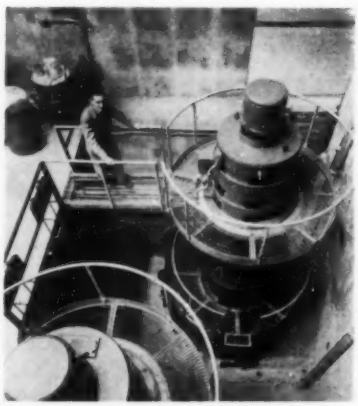
Three 700-hp motors, supplied by the Electric Machinery Manufacturing Company of Minneapolis, Minn., drive the pumps at speeds that vary from 350 rpm to 500 rpm. Pumping capacity varies from 13 mgd to 53.8 mgd. The motors operate at a constant speed of 514 rpm, and are connected to the pumps through a variable-speed magnetic coupling.

The discharge valves are so controlled as to maintain a 50-foot head against the discharge side of the pumps when they are not operating. An Automatic Switch Control valve controller connected to the pump switch opens the valves 15 seconds after the pump starts. To maintain the head, the valves are closed before the pump shuts off. The 36-inch Rensselaer valves are hydraulically operated by city water pressure.

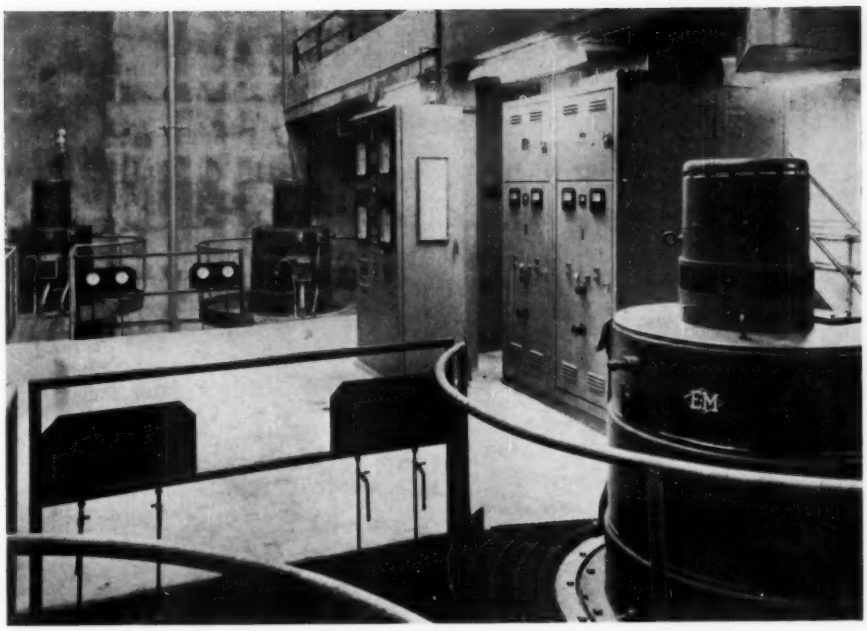
The station is equipped with a Load Lifter 16-ton hand-operated bridge crane furnished by Manning, Maxwell and Moore, Inc., of Muskegon, Mich. Floor gratings can be moved for easy access to all of the pumps.

The lower station sets directly over the River des Peres foul water sewer, which at this point has a diameter of 9 feet. The prime purpose of this station is to convert the lower portion of the sewer, from the station to the river outfall, into a force main during flood-stage conditions.

As the Mississippi River reaches flood stage and begins to back up in the sewer and the des Peres river channel, it becomes necessary to force the sewage into the river to prevent it from overflowing into the channel. This is done by lowering a pressure-operated sluice gate into the sewer and pumping the sewage from the upper side, over the gate into the lower side of the sewer. An automatic operator manufactured by



**Pump spacing at the plant provides easy access for maintenance and servicing.**



Four automatically controlled pumps convert lower portion of the sewer into a force main during periods of flood stage on the Mississippi.

the Simplex Engineering Company of Zanesville, Ohio, opens the gate should a power failure cause the pumps to shut down, thereby eliminating excessive pressures upstream from the gate.

Four 42-inch Worthington pumps, driven by 350-hp, 1200-rpm, constant-speed motors handle the sewage at this station. Variable-speed magnetic couplings connect the Electric Machinery Company motors to the pumps and regulate pump speeds from 150 to 300 rpm. Reduction gears, supplied by Philadelphia Gear Company are also used between the couplings and pumps. This station can handle from 32.4 to 77.7 mgd.

This station is also equipped with a hand-operated overhead crane of 12-ton capacity to expedite handling of heavy equipment when necessary.

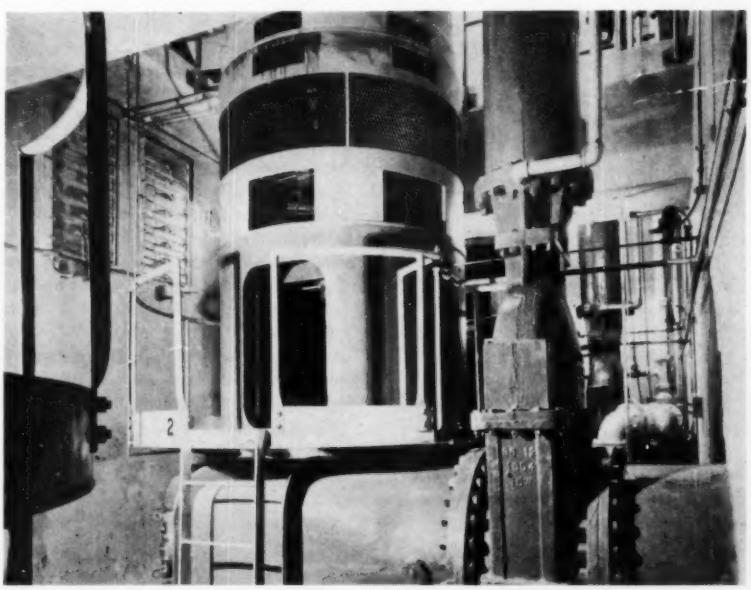
### Pump Operation

Automatic controls at both stations not only regulate pump speeds, but select the number of pumps required at any given moment. Operation is controlled by the rise and fall of a float which, in turn, operates a potentiometer that regulates the speed of the magnetic drive. When the float rises to a predetermined elevation, the first pump goes into service at low speed. If the float continues to rise, the pump speeds up until it reaches its maximum output. At this point, a second pump goes into operation, and the load is equally divided between them. Similar load divisions occur when the third and fourth units are placed into service. As the float begins to fall, the sequence of operation is reversed until the last pump shuts off.

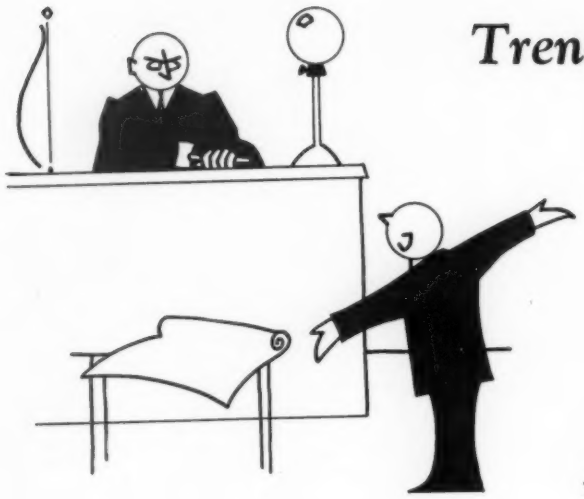
This type of control permits the stations to operate under a wide variation of flow rates with a minimum amount of labor.

Electric Machinery Company supplied the pump motors, control panels, and automatic speed-control device. Allis-Chalmers supplied the main power panels.

Plans formulated by the U. S. Army Engineers call for the eventual construction of protecting walls at certain locations along the St. Louis harbor front. When this is done, a number of additional sewage pumping stations will be needed to pump sewage into the river.



Hydraulically operated valves open and close automatically to maintain a constant head against pumps in Station No. 1. The valves are operated by city water pressure.



# Trends in Court Decisions in Planning and Zoning

By FRED G. STICKEL, III
*Counsel, Roseland, N. J.*

*and*
*Chairman, Committee on Zoning and Planning*
*The National Institute of Municipal Law Officers*

THE body of American planning and zoning law takes its shape from judicial decisions relating to the municipal control of land development. Through court clashes surrounding planning and zoning regulations, an ever-clearer picture emerges of the dividing line between individual and collective rights in the use of land in our complex urban society. During the past year, the number of decisions in these branches of municipal law has continued to grow rapidly. And through this growth our courts have become better informed about the principles of planning and zoning. Narrow, legalistic, and unrealistic decisions so prevalent in the past are declining in number. Replacing them are broader and increasingly significant legal guideposts in defining the limits of proper local control of land development.

During the past year, what significant decisions have been handed down, and what trends can be discerned? Here is a partial review:

***Upgrading Lot Sizes.*** There has been a general trend throughout the country and especially in suburban communities, to upgrade the size of residential building lots. This is frequently done to reduce the potential number of dwellings that can be accommodated in the town and, in other instances, to lengthen the time when municipal services will have to be extended to the outlying areas. This year has seen a continuation and increase in that trend even against the claims of "improper planning" and "confiscation."

In two New Jersey cases this past year, substantial increases in the minimum size of plots were upheld when supported by planning board studies with and without professional advice.

In the Rockaway case* the court upheld the upgrading action because there was an adequate showing of the need for such action even though there was testimony that professional land-use studies then under way were not entirely complete. In the Eatontown case,** the court upheld the legislative judgment of the municipality because lengthy and comprehensive studies conducted by the planning board without professional help indicated the need for such action. Furthermore, no convincing evidence to the contrary was shown.

On the other hand, in New York State,† a general upgrading to a one-acre minimum was held to be confiscatory in a poorly-reasoned opinion based solely on cost to an individual owner of the development of his property. Even the New York courts are not consistent, for in another New York decision an upgrading to a two-acre minimum throughout the community was upheld.

***Barring a Higher Use from a Lower Use Zone.*** Last year we commented on the growing practice of excluding residential uses from industrial zones. We predicted an increasing acceptance of this as part of a general trend toward excluding all but the desired use in certain given zones. We are batting a little better than 500 because in California the exclusions of anything but industrial uses was upheld, while in New Jersey, by a four to three decision, the exclusion of a commercial use from an industrial zone was invalidated.

The California court* in one of the most excellent opinions it has been our pleasure to read, completely demolished the "higher" and "lower" use idea which is the foundation of the so-called downgrading of uses from residential to industrial.

> In fact the term "higher" as applied to . . . uses closer than others to domestic purposes, is not an accurate one; for although the use of property for homes is "higher" in the sense that commercial and industrial uses exist for the purposes of serving family life, the better these secondary uses can accomplish their purposes, the better is the primary use of property served.

Unfortunately, the majority in the New Jersey case** relied on the traditional "higher" and "lower" use philosophy whereas the minority in an excellent dissenting opinion well worth reading adopted the more realistic and modern approach of the California court.

We predict that the philosophy expressed in the California case, as well as that in the dissenting opinion in the New Jersey case, will be commonly accepted throughout the country before many years have passed.

***Municipality Subject to Its Own Zoning Ordinance.*** Last year we reported three interesting decisions on this question. The past year has seen another interesting case in

* *Rockaway Estates* vs. *Rockaway Twp.*, 119 A(2d) 461.
** *Clary* vs. *Borough of Eatontown*, 41 N.J. Super 47.
† *Davlee Construction Corp.* vs. *Town of Huntington*, New York Law Journal, December 9, 1955.

* *Roney* vs. *Board of Supervisors of Contra Costa County*, 292 P(2d) 529.
** *Katobimar Realty Co.* vs. *Webster*, 118 A(2d) 824.

which the court held a municipality to be required to observe the provisions of its own zoning ordinance where it was acting in a proprietary capacity. Strangely enough in this case,* a municipality was restrained from using property in a residential zone for the storage of garbage trucks—the collection of garbage being held to be a proprietary function!

***Power of Board of Adjustment (Appeals).*** Several interesting and novel cases involving the powers of boards of adjustment (appeals) and their method or mode of operation have been reported recently. In New York,** action of a board of appeals

was set aside entirely because it was taken while the board convened in executive session—a session from which the public was excluded. Perhaps a decision could be reached in an executive session, but any official action, such as the adoption of a resolution, must, and should be taken while in official session where the public may hear and be heard from.

In an excellent opinion by Justice Heher the granting of a variance was set aside by the Supreme Court of New Jersey,† although the record before the board showed several excellent reasons for allowing a piece of land partly in business and partly in residential use to be used for a shopping center. One of the reasons given was that the ratables of the town would be increased without a commensurate increase in cost of municipal services. The court held that to be an improper ground for granting a variance, although it declared that it might be a proper basis for rezoning an area. Needless to say, little or no hardship or uniqueness was shown, although there was some evidence of the inability to get access to the land zoned, residential, in the rear.

This case clearly indicates what should be and should not be the subject matter of a variance. It should be compared with the case in California* where a confused court upheld a variance to permit construction of a mortuary in a C-1 retail commercial district because of surrounding uses. The cases are irreconcilable on any factual basis. The New Jersey court was not confused as to when a variance should be permitted, but the California court evidently was.

## Planning: Controlling Subdivision Developments

***Drainage.*** An important decision handed down by the Supreme Court of New Jersey** highlights the need for local planning boards to think well beyond the immediate borders of tracts of land proposed for subdivision development. At issue in this case was the liability for damages to a downstream owner of land resulting from an increased flow of water caused by the disposal of surface draining from a new upstream residential subdivision. The decision makes the upper riparian owner liable to lower riparian owners when increases in stream flows should have been "reasonably anticipated" as a result of the upstream owners' development.

***Holding Down the Speed of Subdivision Development.*** In an attempt to control development so that the municipality could keep pace with the furnishing of necessary municipal facilities, the Village of Sands Point, N. Y., some years ago adopted an ordinance declaring the development of land and the mass construction of homes thereon to be a "business activity" normally prohibited in residential zones. However, a method was established whereby special permits could be issued for subdivision development—the permit being issued as the community felt it could absorb the increase in homes. This method of control was considered by many to be invalid. During the past year the provision was held by a New York court to be outside the power of a municipality.†

***Timing Municipal Expenditures in New Residential Subdivisions.*** The financial advantage of municipal planning is seen in a very important case involving Marple Township, Pa.* This township was upheld in a lengthy litigation when, through the medium of its subdivision ordinance, it required a developer to install both septic tanks and sanitary sewers (which were capped) in an area being developed. The capped sewers were required because main trunkline sewers to be built by the township had not yet been extended but plans to do so in a reasonable time were on paper.

An Illinois court upheld generally a similar requirement while indicating that in the facts of the case at hand such enforcement provisions was not reasonable.**

***Changing Lot-Size Requirements After a Subdivision Has Been Approved.*** In an important decision that is one of the first of its kind, a New York court showed when it would be valid and when it would be invalid to enforce changes in lot-size requirements in subdivisions that had already been approved.† The court held that it would be invalid to enforce larger lot sizes after a subdivision approval had been

given if these conditions prevailed: (1) a performance guaranty had been posted to assure construction of the subdivision improvements, and (2) improvement and substantial development had taken place on the subdivision.

In this situation, the court held that the owner had acquired a vested right. Where, however, a subdivision had been approved but no development relying on the approval had taken place, an ordinance substantially increasing lot sizes in a given area was reasonable and valid even though the action raising the lot standards was based on professional but incomplete planning studies.††

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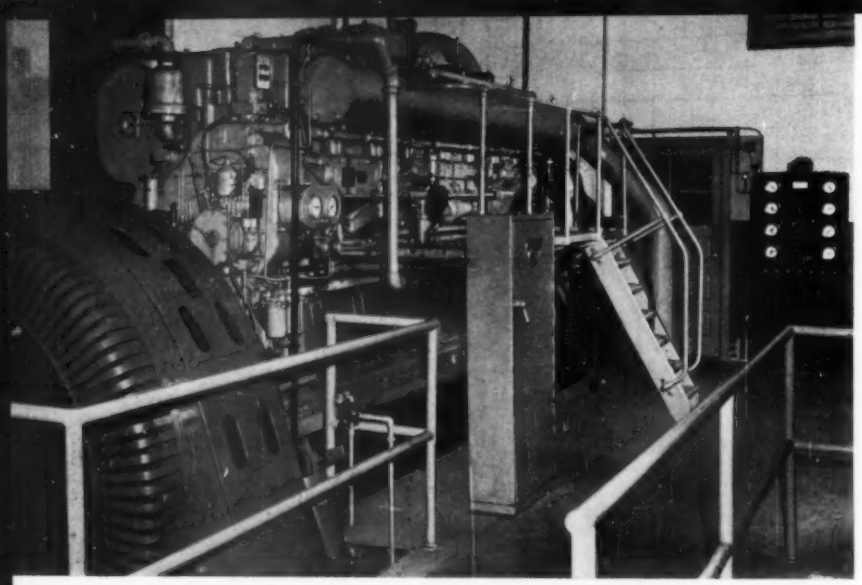
* *Nehrbas* vs. *Lloyd Harbor,* 147 NYS (2d) 738.
** *Matter of Blum* vs. *North Hempstead Board of Appeals,* 149 NYS (2d) 5.
† *Moriarity* vs. *Pozner,* 121 A (2d) 527.

* *Miller* vs. *Planning Commission of Torrance,* 292 P(2d) 278.
** *Armstrong* vs. *Francis Corp.,* NJ *N.J.* 320 (1956) 120 A(2d) 4.
† *Levitt* vs. *Incorporated Village of Sands Point,* 148 NYS (2d) 231.

* See "Courts Uphold 'Capped Sewer' Ordinance," THE AMERICAN CITY, August 1956, p. 132.
** *River Forest State Bank* vs. *Village of Hillside,* 129 NE (2d) 789.
† *Elsinore Property Owners Assn.* vs. *Morwand Homes,* 146 NYS (2d) 789.
†† *Rockaway Estates Inc.* vs. *Rockaway Twp.,* 119 A(2d) 461.



Lake Crystal's new 1700-hp dual-fuel generating unit provides low-cost power.

*High-output engine shows that fuel economy can be maintained under variable-load conditions at Lake Crystal, Minn.*

# *Economy Today Plus Power Tomorrow*

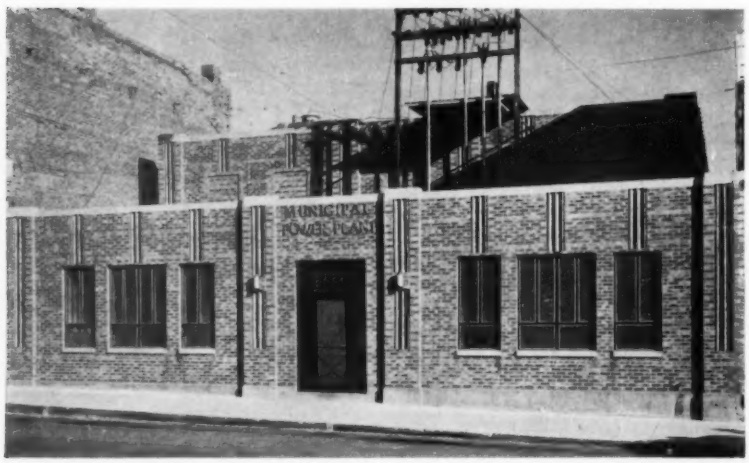
By VIC PETERSON
*Superintendent*
*Village of Lake Crystal, Minn.*

TODAY'S rapid rate of obsolescence in many small municipal power plants has brought about considerable reappraisal of power-plant generating equipment to meet both present and projected demands. Proper equipment selection can affect considerable savings over a period of years. Lake Crystal's experience offers guidance to the direction that plant expansions can take in fulfilling future demands in the most economical manner.

We initiated plans for adding generating capacity to the Village plant in the summer of 1954 and called upon Associated Consultants of Minneapolis to make the necessary studies, plans and specifications to carry out the program. At that time, three engines made up the total plant facilities of 1,710 hp. These engines, all Fairbanks-Morse units of nonsupercharged design, are rated at 300 hp, 450 hp, and 960 hp.

Village officials first considered relocating the plant in a less crowded area. The existing plant was built in the central business district on subaqueous soil that readily transmits vibrations. However, the cost of such a major move did not seem justified if the problem of providing additional generating capacity could be worked out in a more economical manner.

Further study of the power problem showed the advantages of replacing the existing 300-hp unit with an engine of approximately 1,400 hp. This would avoid the necessity of adding an extension to the building. Plant extension was considered, and in doing so, it was decided that if the addition could be made at reasonable cost, the 300-hp engine would be retained as a standby unit. Construction of an adequate foundation to eliminate complaints of vibration transmitted to neighboring buildings was a prime consideration.

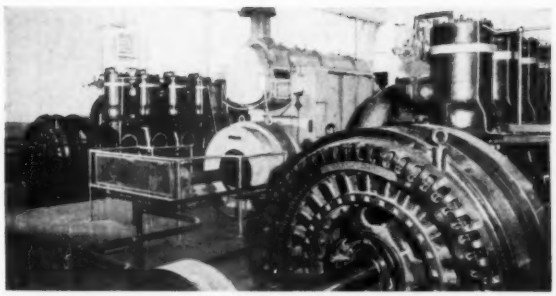



A specially constructed foundation, completely isolated from the building protects the original building and neighboring structures by reducing vibration to a minimum.

### Large Engine Selected

With the receipt of favorable bids, the village officials decided to extend the plant by constructing a wing in the back and installing a 1,700-hp Cooper-Bessemer gas-diesel engine. The additional cost for the larger unit and building extension came to approximately $30,000.

An important factor in the selection of the larger unit was the future demands on the plant. Lake



**The three old units (above) assure adequate capacity for the next ten years. The wing in back of the existing building (right) houses the newly installed gas-diesel engines.**

Crystal, Minn., is an agricultural community with a population of approximately 1,600 persons. Industry consists largely of a milk-drying plant, two feed mills, and a seed-drying plant. The seed-drying plant is a highly seasonal operation. The plant is in operation only for a period of 60 days in the fall and requires 150 to 200-kw loads.

The peak load for Lake Crystal during the seed-drying period of September 1955, was 815 kw. The winter peak load in December of that year was 750 kw, and the average fall and winter loads ran about 435 kw. The peak load during the planning stage of 1954 was only 600 kw, disregarding the seasonal demand of the seed-drying plant.

Based on today's formula for forecasting, the peak will not quite double itself in ten years, but the total capacity generated will double itself. By retaining the 300-hp unit and adding a new 1,700-hp generator, the community has assured itself of adequate power for the next ten years. Had we chosen the 1,400-hp engine, another smaller unit would be required within seven years. In the light of this study, we considered the expenditure of the additional $30,000 as good economy. If we purchased a smaller engine at this time we would have made no appreciable saving in fuel and operating costs. This has been borne out by actual performance of our new unit.

Because the elimination of vibrations was a key factor in the new installation, particular care was taken. The foundation consists of 12 piles driven to a depth of approximately 20 feet. These timbers were then sawed off about 8 inches above the base of the excavation and covered by 6 to 8 inches of gravel. Over this we poured a large reinforced-concrete mat. The mat, resting directly on the piles, is approximately 2 feet thick, and is keyed to the foundation by reinforcing dowels and keyways.

The foundation itself is isolated completely from the building to prevent the transmission of small vibrational forces to the building walls. About 115 cubic yards of concrete went into the mat and engine foundation. This large amount of concrete absorbs a high percentage of the vertical forces and the piling carries the remaining forces directly to solid ground. Under actual operation we have found that the engine itself has no particular vibrational tendencies. The noise level from the exhaust and intake has been reduced to below that of the radiator fan.

### Economical Operation

The 1,700-hp Cooper-Bessemer engine drives a 1200-kw generator furnished by the Electric Machinery and Manufacturing Company. The supercharged dual-fuel engine normally uses fuel oil for pilot ignition purposes and runs principally on natural gas for fuel. Should gas be completely cut off, the engine then operates as a straight diesel unit.

At first it might seem that, with our existing small loads, the selection of such a large unit would create an undesirable situation. The actual operating records prove otherwise, for although the gas-diesel unit ran at less than 37% load capacity fuel consumptions for September and October of 1955 amounted to 10,350 and 11,650 BTU per kw, respectively. Total cost per kw for the two months was 4.25 and 4.51 mills, respectively. Total cost per kw for the months of November and December came to 4.27 and 4.48 mills. During these four months the engine ran 645, 549, 481, and 634 hours, respectively.

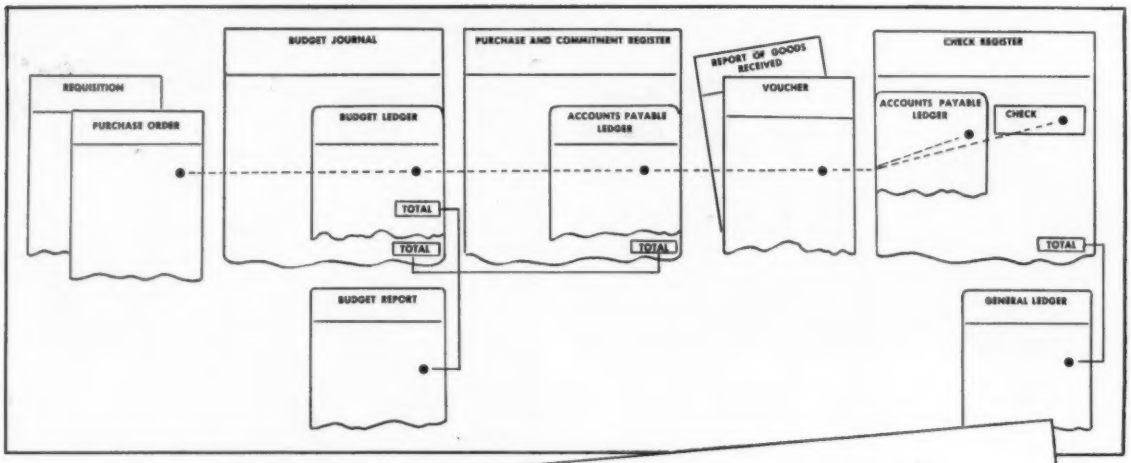
The Lake Crystal record indicates that a higher output engine can be operated around the clock efficiently, eliminating the concern of sudden heavy loads placed on the plant's system. This is a contrast to many electric generating plants that operate at inefficient loadings in anticipation of sudden heavy loads from industry.

## *Moving Ramps Cheaper than Escalators*

AN APPARENT LOW BID of $19,611 on a "speed ramp" which the Chicago Transit Authority plans as a possible supplement to rapid-transit stairs or escalators was submitted by the Stephens-Adamson Manufacturing Company of Aurora, Ill., on August 22. Other bidders were Hewitt-Robbins, Inc., of Stamford, Conn., and Conveyor Systems, Inc., 325 S. California Ave., Chicago, Ill. Stephens-Adamson also offered to do the job in 65 working days.

"These bids indicate," General Manager W. J. McCarter said, "that a speed-ramp installation is appreciably cheaper than a comparable escalator installation. We are hopeful that this test installation will prove successful, so that speed ramps may be placed in other locations where rapid-transit stations are patronized.

The "speed ramp" will carry 7,200 persons an hour at 125 feet per minute on a 15-degree ramp at the 63rd and Loomis station in Chicago. The ramp will be 88 feet long and will have a rise of 23 feet.




# *Faster and Closer Mechanized General Village Accounting*

By WAYNE P. MITCHELL, *Director of Operations, Village of Ridgewood, N. J.*

THE Village of Ridgewood (population 28,000) antedates the Colonial era, and its families are said to receive the highest per capita income of any community in New Jersey. Recently, the Village Commission gave us the go-ahead to completely revise the village's accounting procedures.

## How We Did It

First, we tackled tax billing and collection work. While this system was mechanized, the machines and the system of billing were slow. In introducing our new system of preparing a four-part tax bill to cover the entire year, we installed a Burroughs Sensimatic accounting machine. The tax rate is struck in midsummer, and we prepare bills for the last two quarters of the year based on the rate and a preliminary bill for the first two quarters of the following year. Any shortages or overages that occur are adjusted in the next tax bill.

The machine operator prepares the four-part bill, and the taxpayer's ledger card, the assessor's roll and tax duplicates are prepared as a by-product. The machine computes the total tax and divides it into four installments. The pre-addressed stubs carry the property owner's name, address, property description, and amount of installment. The ledger card is divided by years and posting information includes date each installment is due, account number, and new and old balances.

**Author explains how a complete renovation of municipal accounting systems has aided the Village of Ridgewood.**

We prepare 9,000 tax bills annually. Last year, we completed our posting of assessed valuation in nine days, computed the tax bills within six days, and had the entire tax-billing job finished in 37 days, using just the one Sensimatic machine. Our former system required time and use of two accounting machines.

On collections, the cashier validates the stub on a Burroughs receipting machine and forwards the stubs to the posting clerk. The credit is machine-posted to the taxpayer's ledger card and a cash receipts journal is prepared as a by-product to the posting. Tight control is exerted over cash receipts, as all revenue totals are posted to controls daily.

## Cash Control

A daily summary of cash receipts is prepared on a master form by the cashiers. This form is made up in duplicate with the original copy forwarded to the chief accountant to provide control figures on cash receipts for the revenue journal. Amounts on the summary are balanced against stubs and receipt tickets daily by the cashiers. These stubs are then sent to the machine operator who posts the individual unit cards by control groups.

The control total postings built up from the unit account postings are then posted to the general ledger cash accounts.

Another innovation in our system is in the posting of miscellaneous revenues, such as fees from building permits, health department permits, and from our 165 Duncan parking meters. Permit numbers are posted

*Left.* **This flow chart very well illustrates the extremely smooth operation of record work and the direct tie-in between expenditures and budget control. With encumbrances posted to both budget ledgers and accounts payable ledgers immediately after materials are ordered, the village keeps an up-to-date picture of the status of each department's budget.**

to the various revenue accounts in numerical sequence as they are receipted. This allows the auditor to make his audit by comparing original entries in the permit books with the actual permit numbers posted in the revenue accounts.

For over-all cash balancing, the cumulative monthly total of the daily cash summaries must equal the total bank deposits for that month as shown on the bank statement. This total must agree with the debit posted to the cash account in the general ledger, which, in turn, must agree with the total revenue distribution in the revenue ledger.

**Edward A. Andercheck, chief accountant, and machine operator Myrtle Midena realize the advantages of the recently revised procedures.**

### Budget Control and Accounts Payable

Possibly the greatest gains have been realized in budgetary control and expenditures. The lack of continuity and instantaneous control between the lifting of encumbrances, posting of expenditures, and writing of checks often resulted in duplicate payments being made for goods received. By creating a direct tie between our accounts payable and budget control records, we are now assured that budget encumbrances are posted immediately. Budget balances at all times reflect an up-to-date picture of our finances.

In our accounts payable system, once the requisition and purchase order have been forwarded to the accounting department, the accounts payable ledger is credited and the budget ledger encumbered simultaneously. This not only insures that no expense can escape our records, but also presents us with an up-to-the-minute picture of our costs.

When preparing budget reports monthly, we can immediately check the standing of each department and begin planning for departmental appropriations for the next year long before the present year's books are closed. Another advantage is that once the end of the year does arrive, our only job is to transfer up-to-date totals to the appropriation reserve account for the prior year.

Besides supplying residents with water service, the village sells water on a retail basis to three surrounding communities, and the accounting records cover 55,000 people. On January 1, 1955, we adopted a post-card bill and stub with register sheet ledger for water bills and placed the billing on one of our Sensimatic machines. Charges are set up by account numbers and billing groups are divided into 12 geographical districts. One machine operator is able to handle all of the billing work for between 14,000 and 15,000 accounts and a second girl posts payments.

This new system has virtually eliminated delinquent accounts and payments in arrears because all balances are brought forward monthly and appear on both the bill and ledger. A quick perusal of the ledger detects any past-due account so that we can follow-up immediately with a reminder to the customer.

In one machine operation, the operator prepares the employee's check, stub, earnings cards, and three copies of a payroll journal. Preparation of the payroll for over 200 employees is easily accomplished within a day's time.

### Conclusion

We handle all of our municipal accounting on three accounting machines, with a minimum of clerical help. In the face of rising salaries and costs, we have actually pared our operating expenses considerably in the past three years. In 1952, 30½% of the tax dollar was earmarked for municipal operating costs. At the close of 1955 this percentage had been cut to slightly more than 24%. Our 1955 budget totalled just under $1,500,000.

## *Municipal Credit Unions on the Increase*

MUNICIPAL employees recently organized five new credit unions, bringing to 633 the number of credit unions now operated by them, the Credit Union National Association (CUNA) reports.

The new credit unions are: the Hawthorne City Employees Federal Credit Union, Hawthorne, Calif., for the 150 active and retired city employees there; the Asheville Municipal Credit Union, Asheville, N. C., for 500 city employees and their families; the City of Raleigh Employees Credit Union, Raleigh, N. C., for 450 city employees; the Kankakee City Employees Credit Union, Kankakee, Ill., for 100 city employees; the Missoula Federal Credit Union, Missoula, Mont., for all of the 300 city and county employees.

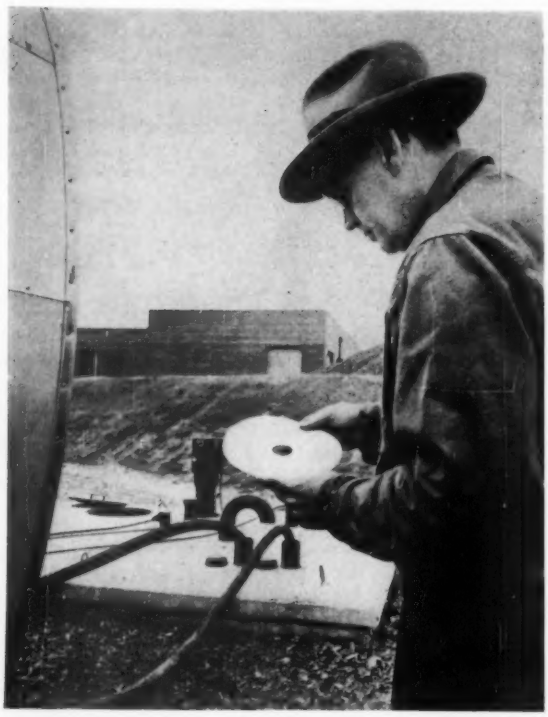
Employees formed the credit unions to make personal loans available to one another at low cost, and to encourage thrift and regular saving. Each credit union is owned and operated entirely by its members under government charter.

There are now 22,255 credit unions with 10,000,000 members in North America.

Two trailers contain the necessary instruments and equipment required to connect the recorder and meters to the plant effluent line.

# *Trailer-Borne Instruments Enforce Sewage Ordinances*

***Charlotte,, N. C., finds a labor-saving way to keep a watchful eye on industrial wastes being discharged into sewer mains***



Recorder charts present a complete record of the flow of pH variation throughout the entire 24-hour test period.

By W. M. FRANKLIN, *Superintendent*
*Water Department*
*Charlotte, N. C.*

MANY cities have ordinances that embody some kind of industrial waste regulations. These regulations may stipulate the permissible pH range, settleable solids content, BOD, or rate of flow; but in all cases, they protect the sewers, sewage treatment process, or both.

Excessive acidity or alkalinity in large volume discharges creates severe problems. Either condition badly corrodes sewer mains, adding greatly to maintenance problems. Overtaxed treatment facilities can result in dangerous pollution of fishing and bathing areas. Sludge from

The panel board tells the story of low and high range flow (top). pH recordings and indications (bottom left and right).

The rugged pH electrode assembly has a temperature compensator to assure accurate pH measurement.

treated sewage sold for soil enrichment, can be spoiled.

It is one thing to write and pass such ordinances—to enforce them is an entirely different matter. Proper enforcement means constant checking, which, in turn, requires considerable time, manpower, and money. Charlotte, N. C., faced this problem, and came up with a workable solution that may offer valuable assistance to other communities.

### Trailer-Borne Instruments

Charlotte's Water Department utilizes two trailers that are equipped to make 24-hour tests of plant effluents by continuous measurement of pH, flow rate, and total volume of flow. The mobile equipment includes one of the first installations of a new compact pH recorder manufactured by Leeds and Northrup Company of Philadelphia. The trailers also include two Hagan flow meters and Chicago Pump Company's automatic samplers with refrigerated storage units.

City regulations require that each plant discharging over 40,000 gallons a day should have its effluent checked every 90 days. In addition, regardless of quantities involved, any corrosive mixtures detected at disposal plants have to be traced to their source, and respective plants notified. The pH must remain within the range of 6 to 9 (7 is neutral) and plants that discharge over 40,000 gallons of waste a day are required to install holding tanks from which the waste can be released at acceptable rates into the city's mains. Too, if the waste is dangerously acid or alkaline, the plant must treat the waste to bring it within the prescribed pH range, before discharging it into the sewer.

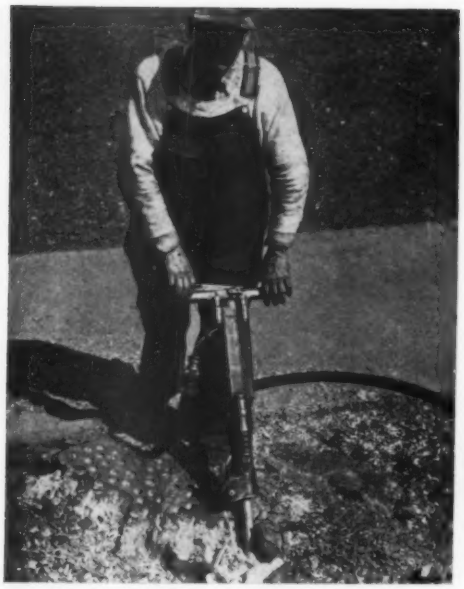
To see that these regulations are kept, the specially designed trailers are constantly on the go, moving from plant to plant, testing the industrial wastes being discharged into the sewers. Also, the strength of the waste must be known, for in Charlotte industries pay surcharges on pounds of BOD discharged into the sanitary sewer system in excess of normal domestic sewage strength.

### Minimum Time Required

Use of automatic recorders in the trailers permits the 24-hour test to be conducted without the need for constant supervision. The trailer is parked adjacent to the holding tank or point of discharge, the necessary connections made, and the instruments take over. The pen of the L & N Speedomax H recorder continuously plots the pH value of the waste and one of the two Hagan flow meters charts the rate of flow. One meter is used for the lower flow rates and the other for high flows. An integrating device on each flow meter shows the total volume of flow for the test period.

Time charts permit engineers to verify that conditions of plant effluent have remained within permissible limits throughout the 24-hour test period. A glance at the charts also tells whether or not the plant waste is near enough to being harmless. In all cases, samples are taken to the laboratory for analysis. The laboratory analysis becomes a matter of routine or high priority, depending upon the story the pH recorder tells.

Charlotte's engineers now conduct test work for over 60 manufacturing plants with some 500 miles of sewer lines spread over an area of about 45 square miles. Continued industrialization in the Charlotte area will increase this work load, making the new streamlined method even more valuable. What is now a relatively simple procedure was formerly a burdensome and time consuming task.



*Left.*
**An air hammer with special "stump gouge" chips away stumps cut close to the ground.**

*Right.*
**If the stump is hard, a power drill first puts holes in it to resemble Swiss cheese. Then the power gouge goes to work.**

# *Stump Removal Needn't Be Costly*

***Air-hammer with a "stump gouge" will remove one stump in 2.4 compressor hours***

By GLEN S. WEEKS
*Engineer and Director of Public Works*
*Melrose, Mass.*

FOR years the removal of tree stumps has been a problem for the tree man and still is. The need for stump removal dictates to some extent the method to be used. Some of the needs are:

- ***For street construction purposes.*** This, in most instances, requires the complete removal and is generally done by the construction forces.
- ***To open a driveway across the grass-and-tree belt between the curb and sidewalk.*** This often requires complete removal of the stump to construct properly the driveway ramp from the gutter line to the sidewalk. In this case the use of a power shovel, preferably a Gradall, appears to be as effective as any method up to this time.
- ***To restore sidewalks, grass plots, or lawns where trees have been cut flush to the ground*** because of the Dutch Elm disease or for other causes.

There are many more stump problems in this last category than in the first two. Many of these remainders of trees which have been lost to the public are left to rot out gradually; if they must be removed the methods are usually costly.

The fact that the Melrose Tree Division is a unit of our Public Works Department may have been a factor in our developing a method for removing stumps 5 or 6 inches below the ground line—sufficient space for replacing the area with sidewalk, street, or grass plots.

In one of our other Public Works divisions we have two air compressors which are available to other divisions. There are, nevertheless, during the year, hours and sometimes days when this equipment is not in demand and the operators are needed at other work and their equipment is left idle.

A few years ago we began to use a special gouge developed by the P. K. Lindsay Compressor Company of Everett, Mass., and with a considerable degree of success gouged the stumps out to a depth of 5 or 6 inches. Borings of 1¼ inches resembling Swiss cheese holes aided the gouging. There are times when, due to wood condition or texture, boring and gouging are not effective, so our two operators have developed a technique whereby they work together in a combined operation where the action is similar to that of cutting a tree with an axe.

During the early part of this year we kept a record of 124 stump removals. The stumps varied in size from 8 inches in diameter to two big split-leaf maples approximately 5 feet in diameter at breast height elevation and at ankle elevation, about 11 feet in diameter. The wood in the stumps also varied from hard to soft. Results indicated 2.4 compressor hours were required per tree removed, although it took two compressor men three complete days to remove the wood growth of the two split-leaf maples to an elevation of 6 inches below sidewalk level.

Advantages of this type of removal are that no new equipment is needed, and equipment can be kept in use until other emergency compressor work arises. Then the stump removing can be stopped.

Big compressors are not needed. We did much of our early compressor removal with the smaller Lindsay compressors.

The M-Scope electronic leak detector and probe greatly facilitates the search for pipeline leaks.

*Electronic equipment aids water system maintenance men in the perplexing problem of leak detection and location*

# *Tracking Down Leaks — The Nonpaying Water User*

By GEORGE M. MacLEOD
*Manager, Geophysical Division*
*Fisher Research Laboratory, Inc.*
*Palo Alto, Calif.*

THE detection and accurate location of leaks is one of the more difficult tasks in the day-to-day maintenance of an operating water company or utility. It is a rare case, indeed, when there is surface evidence of a leak from a buried pipeline immediately above the leak itself. Yet, unexplained water along streets, wet spots in paved areas, or continued shrinkage between measured input volumes and meter readings inform the observant water superintendent of concealed pipeline leaks. But the leak must still be found. Usually escaping water will migrate a considerable distance before appearing on the surface and, as often as not, the water will percolate downward leaving no surface expression at all.

There are several commonly accepted methods of leak detection. These range from plain exploratory digging in the vicinity of surface water to use of simple microphone-type detectors and electronic amplifiers.

The latter system is the most effective. It depends upon the detection and amplification of the minute vibrations or sounds produced by water as it escapes under pressure. A special crystal detector picks up the vibrations and converts them into electrical energy. The electrical impulses are then amplified so that they can be seen on a visual meter and heard in headphones.

Usually some type of electronic filtering circuit is provided, permitting the operator to select the sound frequencies that will give him the best results under specific conditions as well as eliminate most extraneous noises caused by traffic and general background sounds. In general, leak noises fall in the frequency range between 350 and 2,000 cycles per second while most common traffic and background noises range from 0 to 350 cycles per second.

### Leak Sound Origin

Fluids escaping under pressure set up vibrations at the point of escape and generally produce a steady sound ranging in frequency from 350 to 2,000 cycles per second. These are caused in part by the friction of the water against the edges of the pipe opening. In addition, the escaping water dislodges rock and soil particles from the adjacent fill, causing them to boil and churn against the pipe. This sets up additional vibrations usually of a more irregular nature and lower in frequency. These sound vibrations travel along the pipe in both directions away from the leak source.

The distance the sound travels

Main leaks can often be found by connecting the pickup directly to the expanded portion of the pipe at the water meter.

along the pipe is dependent upon such variables as size of leak, fluid pressure, pipe diameter, and the nature of the fill material. The larger the leak and greater the pressure, the greater will be the disturbance. On the other hand, larger and thicker pipes disperse more of the leak sound into the pipe mass itself.

Soil conditions have considerable effect. Leak sounds travel best in dry sandy soil. Moist sand has a dampening effect and moist clay absorbs the sound even further. Saturated fill of any type very effectively dampens the leak sounds. The effect of this dampening can be seen in the fact that a given leak's signal may be detectable 100 feet along the pipe, if the fill is dry sand. If the fill is saturated mud, the same leak may only be detectable from 5 to 20 feet away.

### Methods of Detection

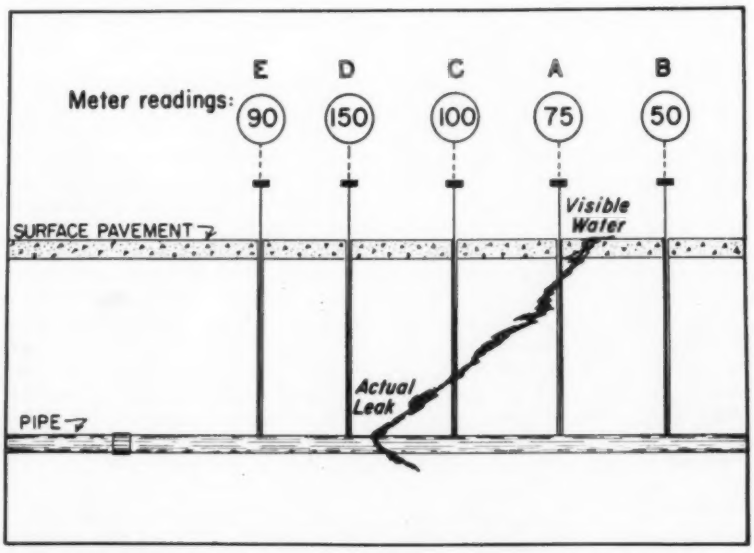
As could be gathered from the preceding material, the techniques required for actual detection of leaks will vary greatly, depending upon local conditions. There are, however, a number of procedures that are helpful almost anywhere. Given the general location of a leak in a water main by the presence of surface water, moist spots, or metered loss, there are several fairly well-defined procedures to accurately spot the leak source.

1. ***Attempt to localize the leak*** as much as possible by making observations with the leak detector at all nearby surface outlets or other fittings in the suspected area. Check fire plugs, meter boxes and valves on both sides of the street. To establish a common base for comparison purposes, an instrument meter value of say 50 scale divisions is arbitrarily selected. The recorded figure at each observation station would then be the amount of gain on the calibrated gain control required to produce the reference reading of 50 on the visual meter. Obviously, the closer the leak, the less gain will be required to produce the reference reading. Generally, this initial reconnaissance will quickly reveal the approximate area of the leak.

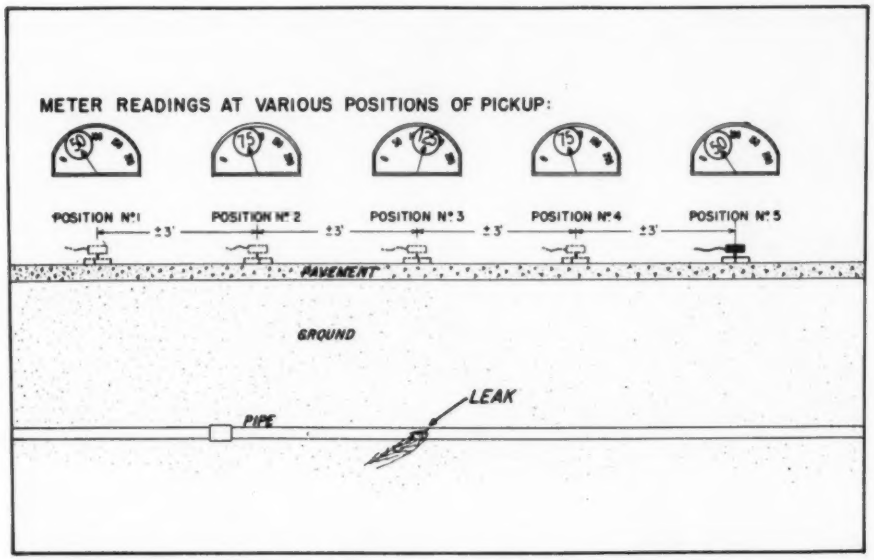
2. ***Mark the surface or plan location of the buried pipeline*** in the critical area as well as laterals and services. Chalk is usually used to mark the pipe's location on the pavement surface after its location has been found by means of a standard M-scope pipe and cable finder or other method.

3. ***Proceed with the specific problem of pinpointing the leak*** after marking the center line of the pipe in the area under suspicion. Occasionally it is possible to detect the leak by merely moving the leak detector pickup to successive surface stations along the chalked pipe center line. Readings are taken against a known base for comparison as the survey proceeds along the pipeline. These readings can then be studied or plotted if necessary and the leak location determined.

Often the leak noise is too weak to properly penetrate the overburden and pavement. In these cases place a sounding rod in actual contact with the buried line at measured intervals. To do this it is necessary to drill holes through the pavement and then drive a pipe or rod to contact the pipe. The leak detector pickup is




Typical reading with leak detector pickup in direct contact with buried pipeline.




Leak detection with the pickup on the pavement above the buried pipeline leak.

firmly attached to the pipe or rod and the sound intensity measured.

The spacing between drill holes along the pipeline will vary, depending on the size of the leak, size of the pipe, and type of overburden. Hence, experience under any given set of field conditions will determine the hole spacing. For ordinary dry fill, a good spacing to start with would be 75 to 100 feet. Saturated soil or moist clay fill will require a much closer spacing. Once the leak location is bracketed between two observation points, one or two more holes should exactly pinpoint the leak. However, first try to pin down the leak without drilling by setting the detector pickup at various points on the pavement above the pipe.

Taking observations by direct contact with the pipe eliminates much of the interference usually due to surface traffic noise. However, power transformers, industrial refrigerators, pumps, printing presses, etc., frequently are in contact with, or close enough to, water mains in large cities to put a large amount of noise into the pipeline. This noise of course competes and interferes with the leak noise. Hence, it is often necessary to do some of this work at night when city traffic and background noises decrease.

Frequently it is necessary to locate leaks in buildings or beneath cement slab floors. First make sure that all plumbing outlets on the property are closed. Then verify the presence of the leak and the approximate amount by observation of the water-meter movement.

The search can be immediately narrowed by taking observations on all exposed valves, fittings, pipes, etc. Usually the leak can be pinned down to one section of the building. If detailed drawings are available, it is a simple matter to carefully check each line with the leak detector. Where no drawings are available, it will be necessary to use an M-Scope pipe finder to first locate the lines.

Occasionally, steel reinforcing or wire mesh in electrical contact with the water lines make it difficult, if not impossible, to use a conventional pipe finder to locate the water lines. Under these circumstances the leak can be detected by laying out a grid of observation points over the suspected area and making sound observations at each grid corner until the leak area is located.

## Periodic Surveys

Many organizations conduct regular leak surveys on all lines at regular intervals. Readings against a reference base are made at all fire hydrants, street valves, meters, and exposed portions of the main. These readings are carefully recorded for comparison with data obtained on subsequent surveys. Many leaks with no surface indication at all have been discovered in this manner.

Experience is still the best teacher. However, the following suggestions should help the leak-detecting crew gain this much-needed experience.

1. Do not try to hold the detector pickup when taking readings. Set the crystal pickup firmly on the pavement or ground when readings are taken above the pipeline. When readings are taken on fire plugs, meters, pipe, etc., firmly attach the pickup to the metal surface. Holding the pickup against the metal surface with your hand usually introduces much extraneous noise.

2. Protect pickup and pickup cable from wind. Wind vibrations are often in the same frequency range as leak sounds. Rubber traffic cones serve as good pickup covers.

3. Do not confuse the sound of moving water in the main or moving meter gears with the actual leak sound. Experiment with known leaks to familiarize yourself with typical leak sounds.

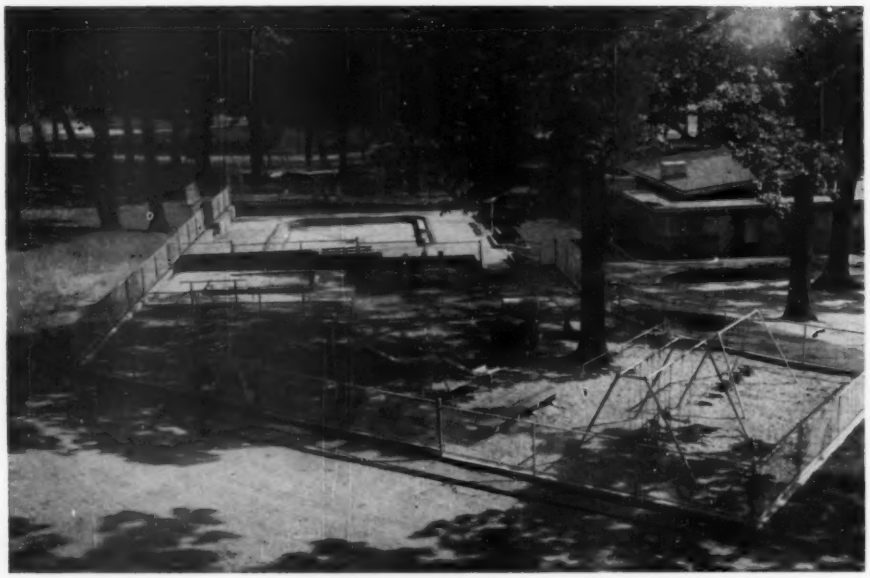
4. When the leak sound has been located on the main, always check for unknown laterals. These often have leaks.

5. On sloping streets the appearance of surface water may be hundreds of feet from the leak. Reconnaissance work can usually locate the general area of the leak before detail work is required. Be suspicious of any gravel fill area, streetcar fills, etc., as a possible channel for escaping leak water.

6. Use the same personnel for all leak-detecting and pipe-finding work whenever possible. This will develop experts in your organization who can more effectively use the equipment.

7. Leak sounds always appear larger at the terminal ends of pipes or valves. This is due to a phenomenon known as "throw off."

8. Be systematic. Follow a distinct routine. Record readings through the use of a given reference base so that you can accurately compare data. Avoid aimless and random searching. Always know exactly where the center line of the suspected main or pipe is located. Keep accurate, dated notes.



Traditional play equipment in imaginative groupings is a feature of the Grand Rapids rejuvenated park system. Here, a play area for older children (background) is separated from younger children's play area (foreground) by commonly used wading pool.

# *Revitalizing Grand Rapids' Park System*

***An eight-year program of enlarging and rehabilitating recreation facilities in this city of 200,000 owes its success to the local park department's own full-time design staff***

By FREDERICK C. SEE
*Superintendent of Parks*
*Grand Rapids, Mich.*

DESIGN IT YOURSELF, is the watchword of the Grand Rapids, Mich., park department. With an administrative and planning staff consisting of five landscape architects, one architectural designer, one engineering aide, and myself as superintendent, this department is completing its eighth year in a program aimed at reshaping Grand Rapids' parks and playgrounds into an up-to-date and modern recreation system.

Begun in 1948, the program has enlarged existing facilities and developed entirely new play areas with planning standards geared to provide each facility with a maximum of usability, safety, good looks, and maintenance efficiency. Within the parks themselves, we have placed a major emphasis on the use of equipment to challenge the almost inexhaustible play instincts of children. Furthermore, we have achieved a maximum distribution of recreation space by developing combined park-schools in cooperation with the Grand Rapids Board of Education.

In addition, we have developed a zoological garden to take the place of a zoo that one time existed. Containing some 540 specimens, the project emphasizes floral and landscape effects and uses barless exhibits wherever possible.

Now with 34 recreation areas in active use, this city of close to 200,000 persons is justifiably proud of its rejuvenated park and playground system. Here is a report on our progress to date together with an account of some of the design techniques we are using.

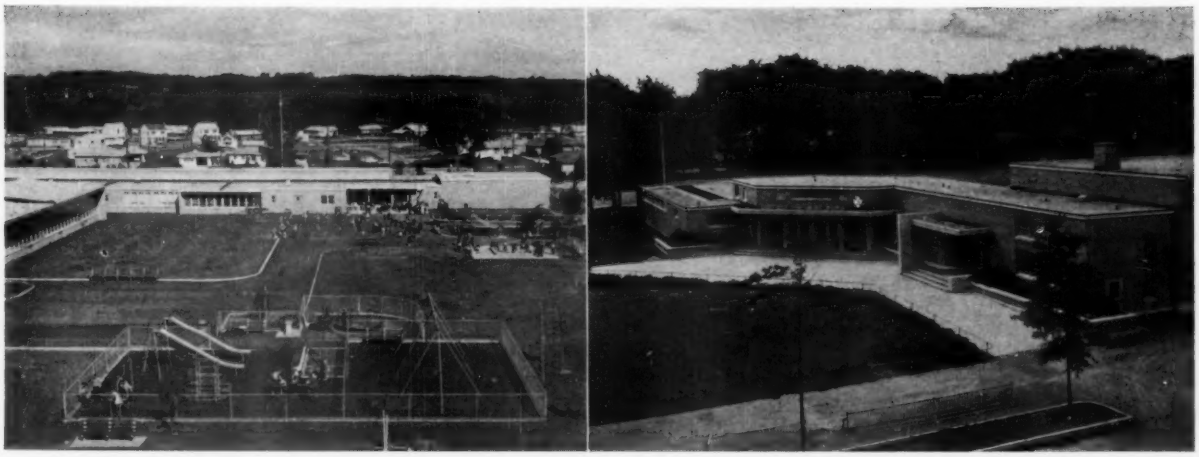
## Design Staff

More than anything else, we as members of the Grand Rapids park department believe that the development of our own design and engineering staff has assured the success of our rejuvenation program.

Through a permanent staff that has become intimately acquainted with the needs of our city, we feel that we have been able to develop designs that best reflect the character and feelings of our citizens. We also feel that rapid changes in local population and economic trends, in traffic patterns, and in other factors can be taken into consideration more accurately with a fulltime, on-the-spot design staff than would be the case with a long-range plan and no such staff.

We also feel that we've licked the common complaint of many park superintendents who must request their city engineers to perform design tasks for them only to find the engineer too engrossed in bigger and more important projects when help is most needed. Furthermore, virtually all persons concerned with the design of our new parks and playgrounds are landscape architects, who by virtue of their education and background are best qualified to lay out areas for leisure time and playtime activities.

These factors were in the minds of the Grand Rapids' city councilmen when they gave the park department the green light to organize the design staff at the outset of the park development program. Two other factors clinched the argument. The



This new elementary school (left) shows how the park-school technique is being carried out in Grand Rapids, Mich. Apparatus area for older children is in the foreground while the area for first and second graders is in the background. Both are separated by large grass areas and are connected with an asphaltic concrete walkway. The completed Garfield Fletcher Park pool and recreation center (right) was planned by the full-time design staff of the Grand Rapids park department.

first of these was the fact that the rehabilitation of play areas would involve the design and redesign of many facilities rather than just one or two. And second, since the large amount of funds needed to carry out the program was not available in one lump sum, it was necessary to extend the program over a period of years.

We have found that the quite common haphazard arrangement of playground equipment around the periphery of an area leads to confusion, difficulties in supervision, and unsafe conditions. We, therefore, adhere to the principle of segregating play areas into separate and defined sections. For instance, a play section for the little fellows up to eight or nine years of age, and another section for the older children. This is generally separated by something which will be used by both age groups—either a fieldhouse, a wading pool, or just an open general purpose grass area.

These different sections are definitely marked by enclosing them with a 4-foot wire fence with one entrance for each section. This fencing has proved highly satisfactory in controlling the activities within these separate areas. Statistics have proved that a great many children are hurt by running into moving swings. We, therefore, fence in the swing area to prevent an unaware approach to a swing in motion.

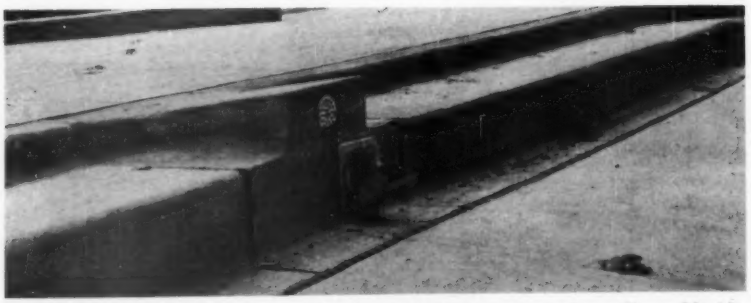
### Surfacing for Apparatus Areas

In surfacing apparatus areas we put down 6 to 8 inches of crushed rock, or gravel plus agricultural tile drainage when necessary, and cover with 8 inches of coarse sawdust. We had been using tanbark, but this material has become increasingly difficult to obtain, while the supply of coarse sawdust is generally plentiful in most parts of the country. Our experience with this type of covering has now, after four years of constant use, been causing very little, if any trouble. The area dries quickly, weeds will not grow, and coarse sawdust does not adhere, to any great extent, to the clothing of children. Furthermore, the resiliency is excellent. It does require daily raking and occasionally some replacement. This portion of the playground is then enclosed by a 4-foot-high fence, or other suitable barriers.

### Surfacing Other Active Play Areas

Parts of playgrounds that do not contain apparatus are generally surfaced with asphaltic concrete to provide opportunities for wheel toys, hopscotch, and other games suitable to play on a hard surface. We have also found that an area for informal ball play, basketball practice, tether ball, or other low organized activities can very well be conducted on an

The men behind the parks (left to right): Mayor Paul G. Goeble, Park Superintendent Frederick C. See, and City Manager Donald M. Oakes are studying a model for the swimming pool and recreation center to be located at the Garfield Fletcher Park.



**Detail of wading pool shows specially designed steel container for sodium chloride tablets used in purifying pool water. It is set below water-level under the inlet pipe.**

area surfaced with gravel and clay to which an oil-bearing dust layer has been applied once a season.

We fully realize that all these before-mentioned factors are not startling or new. The only fact that Grand Rapids is justifiably proud of is that practically every one of the 34 active parks and playgrounds are designed along these lines.

For the past three years we have been experimenting with and now have developed a type of wading pool that provides safe water without requiring costly recirculation equipment. The Michigan State Health Department and our city health department have studied the operation of these pools, and on the basis of daily water analysis reports have considered the water to be completely safe.

Here is how our design works. First, we adjust the inlet and overflows of the city's 17 wading pools to completely replenish the water every eight hours. Second, we have developed a special system of applying chlorine to the water which is safe, easy, and does not require skilled help.

We have designed a small stainless steel box which is set below the water level under the inlet pipe. In this box we place sodium hypochorite tablets, the number of which has been empirically determined for each pool and which ranges from 100 to 200 tablets three times a day. (Grand Rapids' wading pools have capacities that vary from 7,000 to 20,000 gallons). When the temperature is below 70 degrees, the application can be cut in half. We supply each park caretaker or attendant with a small inexpensive comparator to use several times a day to see that the chlorine residual does not drop below one part or go over three parts per million. The operation is practically routine, does not require any judgment on the part of the attendant, and has proved to be extremely successful.

Finally, to reduce ground dirt from being carried into the pools, we have fenced the pools off from surrounding areas, and then within the fenced portions have surrounded them with an 8-foot concrete deck. Furthermore, approaches to the fenced areas are paved with asphaltic concrete.

### Park-Schools Concept

The park-school idea has been applied extensively in Grand Rapids. Through this concept school grounds and buildings are operated for neighborhood recreation purposes during hours when schools are not in session. Although different governmental units are responsible for our general municipal services on one hand and our educational services on the other hand, the Grand Rapids City Commission and Board of Education were able to conclude an agreement for the joint use of school facilities.

Twelve new elementary and junior high schools on sites of from 5 to 30 acres are being fully developed for park and recreation purposes in accordance with this agreement. (The new schools are being financed with a multimillion dollar bond issue passed in 1950). Since care is exercised in placing the school sites in neighborhood locations that are within easy walking distance of each child we are assured of a proper distribution of outdoor playground space.

### Maintenance Efficiency

A park system, no matter how well conceived and executed, stands or falls with proper maintenance. High labor costs make it mandatory for park departments to use the most modern and up-to-date equipment available and to organize their maintenance force for top efficiency.

This is the age of specialization and the City of Grand Rapids is attempting to follow this principle in its maintenance organization. Instead of having personnel assigned to the various parks mow their own lawns, we have formed mowing crews whose only duty is to mow all lawns. These crews go from park to park and are equipped with the latest and largest rotary- and reel-type mowers. This type of operation has cut down the maintenance cost on these mowers by about 40%. These same crews are charged in the fall of the year with mulching and removing leaves and, during the winter time, with snow removal and making ice rinks good. Other crews have been set up for weed control; others for planting and maintaining all floral plantings, including seeding of grass.

The Forestry section is also divided into several groups, such as combating the Dutch Elm Disease, trimming trees, and street tree planting.

With these specialized groups we find that the men acquire more proficiency in their tasks, and it is easier to find and train men for one operation than to try and hire a person who has knowledge in all the phases of operation and maintenance.

### Tree-Trimming Program

The use of modern equipment is particularly noticeable in the tree-trimming operation. It is extremely hard today to find workers who are willing to risk their lives climbing trees. However, with the use of hydraulically operated aerial lifts it is possible to use older men and persons not used to climbing trees, for this type of operation. Another useful and labor-saving device has proved to be the York rake. Not only does it do the job for which it was designed, namely picking up loose stones and debris, but we have found it very useful in spreading topsoil, especially if the amount to be spread is not very large and the use of a bulldozer is not warranted.

The citizens of Grand Rapids are fully aware of the benefits they derive from a good park system. The city administration does not consider parks and recreation as a fifth wheel on the municipal service wagon, and so whatever has been done here has been accomplished through the wholehearted cooperation of the citizens and all governmental agencies concerned.

# *Selling Municipal Office Workers a Change*

By LON HOWARD ARMSTRONG
*Trustee, Knox County*
*Knoxville, Tennessee*

**Knox County, Tenn., Trustee L. H. Armstrong inspects the tax work performance of a Friden, and tells here how the trial installation was so well dramatized.**

MUNICIPAL efficiency has so many natural enemies that no official can afford to turn a deaf ear to equipment or procedures which raise the efficiency level. The best means of assessing the value of a proposed improvement is almost always an on-the-job trial.

The most difficult factor to control in making such a trial is the operator of the machine or the clerk assigned to carry out the new procedures. Because the employee tends to form a bias in favor of the methods and machinery with which he is familiar, we are sometimes faced with a very strong prejudice toward change-over to an unfamiliar though more efficient method or equipment.

Because bias resists logical explanation, the answer may sometimes be found in the dramatic atmosphere of a competition between the outdated routine and the proposed improvement. If such a competition is to be dramatic, it should be kept uncomplicated and brief. Here's an example from the writer's personal experience.

### Dramatizing Office Machine Efficiency

For years we had been using electric calculators to distribute tax and compute interest. Some of us were deeply impressed with the demonstration of a fully-automatic Friden. To dramatize its simplicity of operation for an operator accustomed to complexity, we broke the work down into its basic parts—in this case, addition, subtraction, multiplication, and division.

This is the first important step in dramatizing efficiency: *Break the job down into its units.* The second step is to apply the new method, then the old one, to each unit, *letting the operator do the work whenever possible.* The order here is important: *First new, then old.* Comparison automatically forces an analysis of the old outdated office procedure system.

Our operator took her place before the Friden and was told to set any number on each of the two keyboards, next, to depress the bar marked MULT. The numbers appearing immediately in the answer dials were the decimally correct result of multiplication. She involuntarily began to repeat it, was asked to count the number of necessary steps. There were only three steps. Automatic clearance, whenever desired, was an integral part of the machine operation.

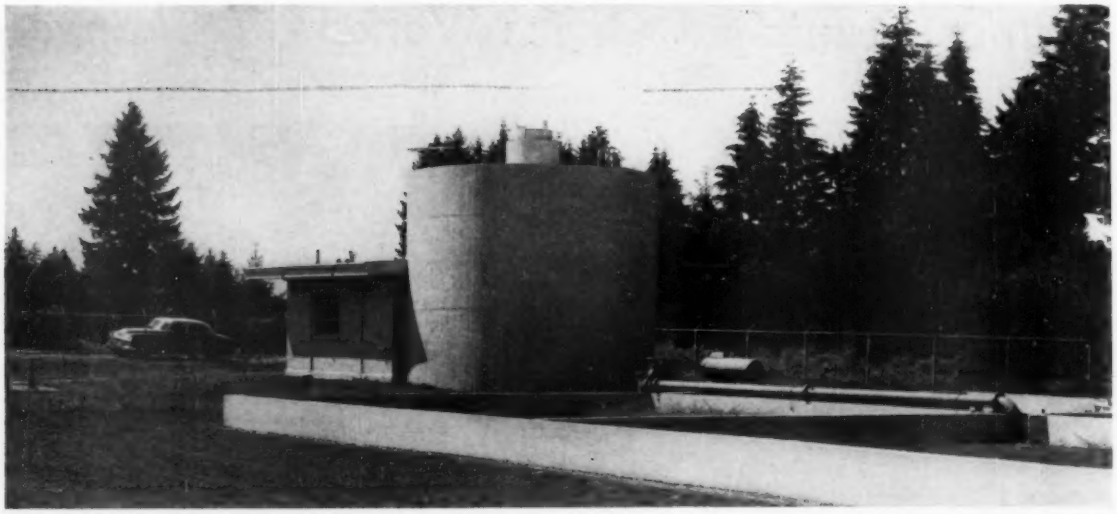
She was asked to count once more as she ran off a similar multiplication on the old equipment. Probably for the first time in years she was analyzing the operation into its four separate steps.

### One Explanation for Three Steps

Now it was explained that addition, subtraction and, surprisingly enough, division were enough alike for one explanation to suffice for all three. To heighten the sense of dramatic anticipation, numbers were entered at random into the answer dials, and the carriage was shifted out of position. Then a number was indexed on the large keyboard, and the operator was directed to press the ENTER DIVD bar. As she did so, the carriage shifted into position, the dials cleared, the new number appeared in the dials—tabulated to the correct decimal position. Now a smaller number, arbitrarily chosen, was indexed on the keyboard. This number, it was explained, could be added to, subtracted from, or divided into the first number simply by depressing the key marked with the symbol, "+", "—", or "÷". When the competition was finished, even those of us who knew what to expect could not help being further impressed. It's quite a jolt for the poor student in mathematics to observe that long division needn't be more difficult than simple addition or subtraction.

### Put to Other Uses

Later, this same day, the machine was being used on tax and interest problems—with enthusiasm. The resulting increase in efficiency would probably never have been realized without the enthusiastic cooperation of the operator.



The Canby sewerage system operates entirely by gravity flow. Pumping is not required even with the river at flood stage.

# *Canby, Ore., Completes First Sewer System*

***Septic tanks and drainage fields give way to sanitary sewers and modern treatment facilities***

By RONALD G. TATONE
*City Engineer*
*Canby, Ore.*

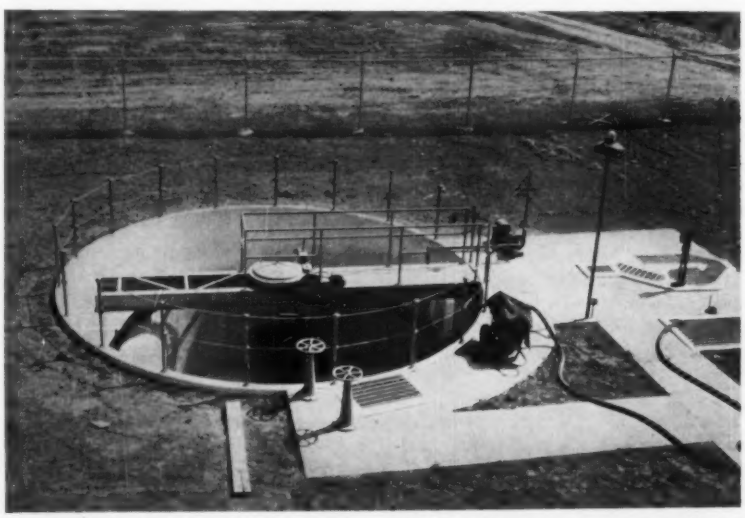
FOR the first time since its incorporation in 1893, Canby can be classed as a modern community in every respect. A complete sewer system does away with the septic tanks, drainage fields, and dry wells. What's more, our sewage-treatment plant, constructed at the same time as the sewer system, assures us that the new system will not contribute to the pollution of the Willamette River.

The acquisition of a complete sewer system and a treatment plant in a single program by a community of less than 2,000 persons was not an easy task. It took several years and two referendums to sell the idea to the people, but once the project was under way, the council received several petitions for lateral extensions at every meeting.

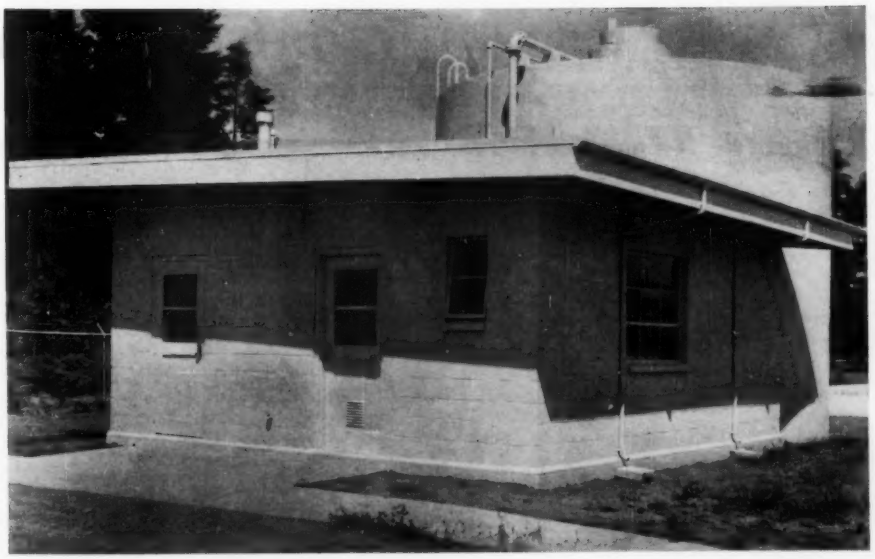
Construction of the plant cost approximately $40,000 and the sewer contract amounted to about $170,000. Additional sewers will bring the total cost in the neighborhood of $250,000. A $165,000 municipal bond issue covers the basic financing with property lien bonds used to pay for the lateral lines.

Approximately 7 miles of sewers are being installed. The system includes about 11,500 feet of 8-inch, 2,750 feet of 10-inch, 600 feet of 12-inch, 4,750 feet of 15-inch, and 6,800 feet of 18-inch concrete pipe. We also installed 8,600 feet of 8-inch and 1,150 feet of 10-inch asbestos cement pipe along with the necessary manholes and service connections. The work included one crossing of the Southern Pacific Railroad main line, one swale crossing, and one crossing of U. S. Highway 99E.

Canby residents have petitioned for approximately 12,250 feet of ad-



A single, 20-foot-diameter clarifier removes settleable solids from the sewage. Effluent from the plant is chlorinated before being discharged into the Willamette River.



Within this concrete control building is the chlorinator and sludge pump.

ditional sewer line since the initial contract was awarded. The majority of these new lines consist of 8-inch concrete or 8-inch asbestos cement pipe. The A. L. and A. Construction Company of Portland held the contract for sewer construction.

The sewage-treatment plant is located near the bank of the Willamette River, about 1½ miles from the city. The hydraulics of the plant and sewer system is such that the raw sewage flows to and through the plant and on to the river by gravity. Pumping is not required even with the river at flood stage. Bypass provisions permit the sewage to bypass the entire plant or any of the separate units whenever necessary for maintenance or repair.

Plant design is based on a population of 2,500 people and provides for primary treatment and chlorinization of the plant effluent. The entire plant is constructed inside a fenced area that is 200 feet by 140 feet in size.

### Plant Facilities

Sewage first enters the grinding station where a Chicago Pump Company comminutor cuts up the large particles before they are discharged to the clarifier. The clarifier is a circular tank 20 feet in diameter and equipped with a Dorr-Oliver sludge-collecting and skimming mechanism. An exterior mounted Pacific Pumping Co. centrifugal pump, driven by a 5-hp General Electric motor serves as a wash-water pump for the plant. A 1½-hp Sumo Submersible pump, set at a depth of 40 feet, supplies potable water from a 6-inch cased well 240 feet deep. The pump, made in England and assembled in the United States, was supplied by R. M. Wade and Company.

A Ralph B. Carter positive displacement-type pump transfers the sludge from the clarifier to the digester. The unheated digester has a 20-foot diameter and a sidewall depth of 20 feet.

Digested sludge flows by gravity from the digester to one of four sludge-drying beds. The beds occupy an area 56 feet square.

Effluent from the clarifier passes through a small chamber where it is chlorinated before being discharged to the Willamette River. A manually adjusted type Wallace & Tiernan chlorinator is used for post chlorination.

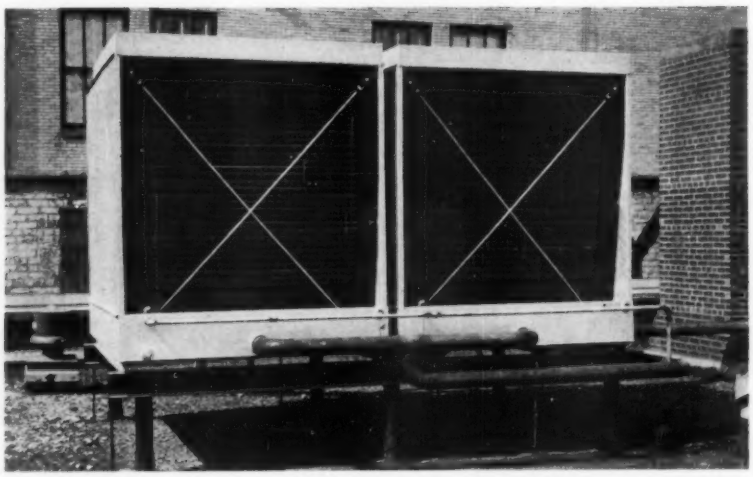
A small control building houses the sludge pump and chlorinator. Economics dictated a simple structure, so it was made of concrete block with a shed-type roof. However, it is neat in appearance and adequately serves the plant.

Cornell, Howland, Hayes & Merryfield, Consulting Engineers of Corvallis, Ore., designed the plant and sewer system. George W. Lind of Portland, Ore., was the General Contractor for the plant. Rex Eversole is Mayor of Canby, Ore.

Another view of the plant showing the grinding station where large particles are cut up by a comminutor. Also visible are the settling basin, and sludge-drying beds.

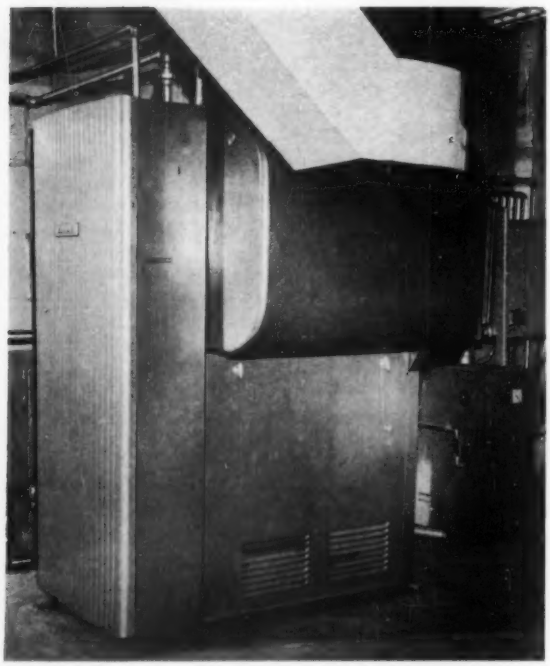
# *Water-Wasting Air Conditioners Must Pay a Surcharge*

By J. P. LAFERLA
*Metropolitan Utilities District*
*Omaha, Nebr.*



Water cooling towers, when used in connection with air-conditioning equipment, save many gallons of water that normally are wasted in the nonconserving units.

***Study at Omaha, Nebr., justifies an extra charge against nonconserving air conditioners with their sixfold greater water requirements***



This 5-ton water-cooled air conditioner is typical of the units used for commercial installations in the City of Omaha, Nebr.

AS most people know by now, air conditioners can be grouped into "conserving," and "nonconserving" classes. Most air conditioners use water in some way or another to remove the heat from the air. If they are nonconserving, they simply discharge the warmed water to the sewer. If they are conserving, they send it to a cooling tower or other cooling device, so that it can be reused.

From the public's standpoint, the nonconserving air conditioner has the lowest first cost. Moreover, with existing water rates designed for more normal uses, the public generally finds it less costly to let the city water pass through the conditioner and directly to the sewer, instead of using a water conservation device.

The difficulty is that the air-conditioning load is a heavy one, occurring at a time when water demand is greatest, and only for a limited period of the year. In almost every case, the water utility has to spend much more to deliver water used for air conditioning than the customer pays when he is charged at conventional rates.

To correct this, the Omaha Metropolitan Utilities District placed a surcharge on water users who operate air conditioners of the nonconserving type. However, to administer the surcharge rate effectively,

the District had to know how many air conditioners of each type were in use, what their sizes were, and how much water each used.

To get this information, the District began an air-conditioning survey on November 7 of last year. Meter readers made personal calls on every customer whose meters showed water use exceeding 8,000 cubic feet per month during July, August, or September of that year. On this call, the readers recorded on a separate card for each customer who owned air-conditioning units, the following information:

1. Size of the unit or units.
2. Classification—conservation or nonconservation.
3. Make and model of each unit.
4. Installer, and date of installation.

The survey embraced 4,800 customers. Of these, 1,700, or roughly 35%, did not own air conditioners. Of the remaining 3,100 customers, all with air conditioners, only 16% (500) owned conservation-type air conditioners, and a full 84% let the water spill into the sewer after a single pass through the air conditioner.

Considering the entire group of 4,800 customers using over 8,000 cubic feet of water per month in this summer period, the figures break down as follows:

| | |
|---|---|
| Nonconserving units | 54% |
| Conserving units | 10½% |
| No air conditioners | 35½% |

The group without air conditioners includes schools, apartment houses, certain businesses, and some residences where the customers water their lawns excessively.

As might be expected, most of the conserving units are the larger air conditioners. Of the nonconserving type, about 71% consists of small units rated at 5 tons or less. On the basis of refrigeration capacity, the figures run as follows:

| | | |
|---|---|---|
| Nonconserving | 21,284 tons | 2,633 units |
| Conserving | 17,411 tons | 572 units |

To eliminate errors, the District doubled-checked all units over 10-ton capacity and designated as nonconserving. At this size, the amount of water used is so large that a conservation device would pay for itself in water saved at the conventional rate; however, the owners are indifferent to these savings.

Nevertheless, the District could not be indifferent to the effect it created on the water system. Based on an average use of 900 gallons required per day per ton of refrigeration, the nonconserving units required about 12.8% of the average daily pumpage during the summer months. Based on a percentage of a maximum day, the figure is even more distressing, running to 16.7%. This meant that on a peak day when the water system was being strained to its greatest extent, 3½% of the customers were wasting 16.7% of the water by running it through an air conditioner once and sending it to the sewer.

**Extensive use of nonconserving air conditioners means additional water treatment and pumping facilities. The surcharge places a proper share of additional plant costs on the customers most responsible for in-the water demand in Omaha.**

### Post-Installation Study Made

The District also studied the increased use of water by 120 customers after installing air conditioners. This showed rises in water use varying from 12% to 3,350% with an average increase of 575%. Thus, customers owning nonconserving units used almost six times as much water during the summer of 1955 as they did during the previous summer. Naturally, air conditioning did not account for all this increase. The modern home clothes washer, dish washer, and other devices all play a part; but these are only minor factors compared to air conditioners.

Some state that waste water from nonconserving units can be used to irrigate the lawns; however, our study did not show that this was a practice followed to any extent. The lawn sprinkler appears to be used just as much after an air conditioner is installed as it was before.

Most customers are not happy about the surcharge, but they seem to understand the existing condition and so gave the meter readers the information requested. A few were indignant, and some questioned its legality. A few threatened court action.

However, the information gained through this survey certainly justifies a water surcharge made against customers with nonconserving units. The surcharge is not a discriminatory rate against a few, but a protection for a great majority against high rates that necessarily would have had to be imposed to finance a water plant and system large enough to serve the comparatively few customers wasting large amounts of water through nonconserving conditioners. On a peak day, this wastage amounts to 20,000,000 gallons.

The surcharge rate established by the Commission is $36 per ton of

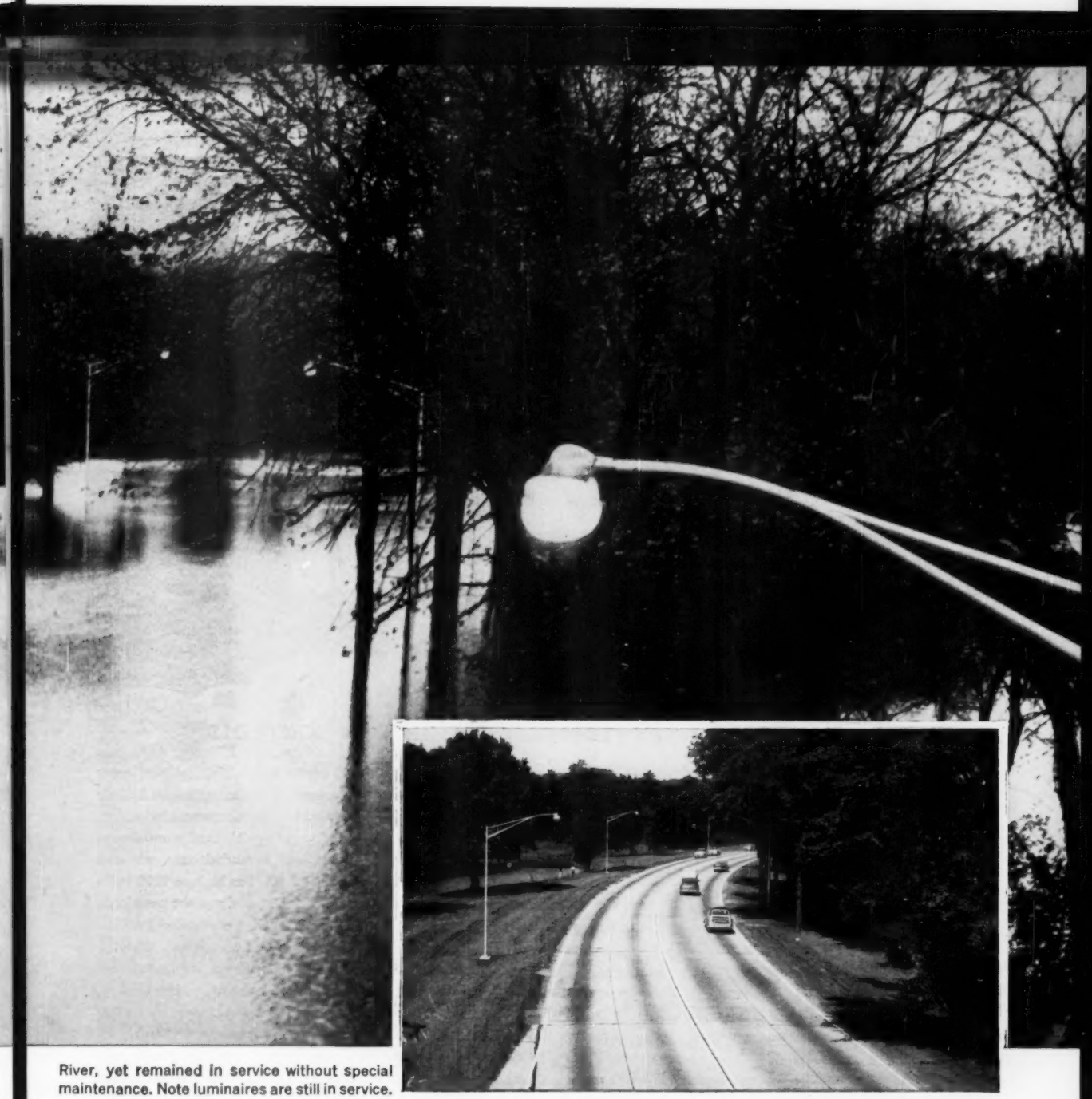
*(Continued on page 137)*

Saw Mill Parkway in Westchester County, New York, was the hardest hit of all thoroughfares. HAPCO Aluminum Poles were swamped with flood waters from the overflowing Saw Mill

# HAPCO Aluminum Poles

When the year's worst storm hit, dashing seven inches of rain in a three day period on the Yonkers, New York area, parkways were swamped, roadbeds demolished, bridges washed out.

Lighting losses were kept to a minimum because highway planners specified HAPCO Aluminum standards and brackets. HAPCO Aluminum lighting equipment retains its original strength and beauty under the most adverse weather and atmospheric conditions. It requires no initial or maintenance painting, offers the highest resistance to rust and corrosion.



River, yet remained in service without special maintenance. Note luminaires are still in service.

# Stand Firm in Heavy Flood

Since HAPCO poles are lightweight, they install faster, easier, you begin saving money as soon as you buy. There is a HAPCO pole designed for every outdoor lighting application. Complete information is presented in Catalog HAL-754. Write for your copy today.

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Division of Hubbard and Company
Pittsburgh 1, Pa.

ASK YOUR MAN IN THE FIELD ABOUT THE

# PROTECTION

## IN FISHER-PIERCE PHOTOELECTRIC LIGHTING CONTROLS

Lighting engineers who have specified F-P controls for installations know that a basic reason for the highly dependable operation of these controls is their carefully engineered *protection* against surge voltages, transients and lightning. Here are specific examples: components are spaced to withstand a *minimum* of 3000 volts RMS between any circuit point and grounded case, without breakdown; F-P tests to *5000* volts; basic insulation level as high as 7500 volts without arrestor . . . control circuit and load can both be fused against transients and surges . . . design provides fail-safe operation, so that controlled load remains on or becomes energized in the event of any functional failure . . . transformer is the type which isolates the supply voltage from the control circuit . . . components are all operated well below maximum ratings . . . the load relays used in F-P controls will handle an inrush current ten times the steady state current . . . larger controls can be equipped with accessory lightning arrestors. Protective design features like these pay off in lower installation *and* operating costs. And *only* F-P controls combine such protection with these four other important features:

64400

**COMPONENT QUALITY** . . . Pre-aged, long life tubes. Wire wound potentiometer. Metal encased and ceramic capacitors. Non-hygroscopic 1P39 phototube. Balanced armature Sigma sensitive relay.

63300C

**DESIGN ADVANTAGES** . . . Can be installed, serviced or removed safely and easily. Wide mounting versatility and orientation *after* bracket installation.

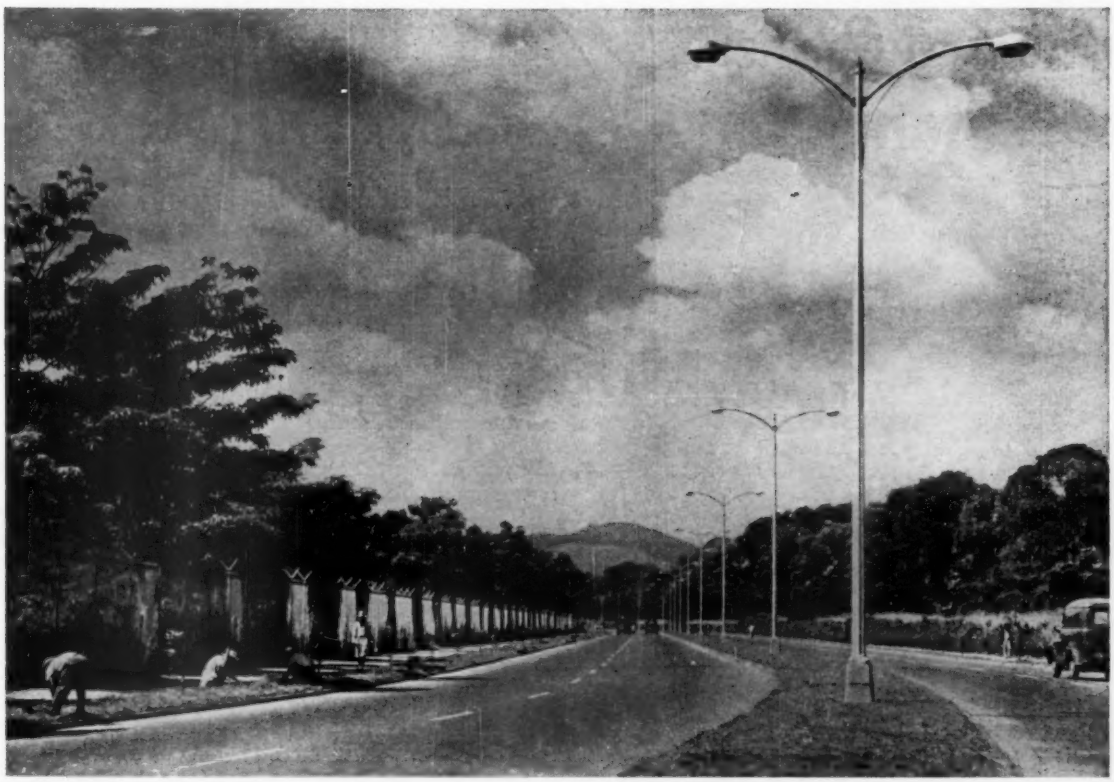
**ADAPTABILITY** . . . Three basic series and numerous models for all mounting requirements, operating voltages, load capacities and desired contact arrangements.

**DEPENDABILITY** . . . Proven by the thousands of F-P controls used by hundreds of utilities, over the past ten years.

**Fisher-Pierce Bulletins, available upon request, give complete specifications and operating data.**

**THE FISHER-PIERCE CO., INC.**

94 Pearl Street, So. Braintree, Boston 85, Mass.



Venezuela's Autopista del Este approaching Caracas. Fluted aluminum Monotube poles carry the modern luminaires which now light this modern 70-foot four-lane highway.

# Big Lighting Program in Caracas

***Lighting—modern and efficient—is built into well-known Venezuelan highway as part of a progressive public works program***

THE highway shown here is typical of the Caracas, Venezuela, that has grown from 122,000 persons to nearly 1,000,000 persons since 1920. It is the Autopista del Este (Eastern Automobile Highway) which is lighted by Westinghouse mercury vapor lamps and luminaires. This four-lane limited-access road is approximately 70 feet wide and has many overpasses and cloverleaf intersections.

### Mounting

The lights are mounted 27 feet above the pavement on 540 aluminum Monotube poles made by the Union Metal Mfg. Co., of Canton, Ohio. There are 320 twin-light and 220 single-light poles included in the installation at present. Illumination for this roadway meets the latest standards prescribed by the Illuminating Engineering Society and provides a greater degree of nighttime safety for those traveling it.

A similar development is the 10½-mile superhighway between Caracas and its coastal airport Maiquetia and the seaport La Guaire. It has cut the time from the former hour to 20 minutes on the new highway. Further indication of the vast public works activities in petroleum-blessed Venezuela is the shipments for distribution lines and street light brackets of 5,900 steel Monotubes in 30-, 35-, 40-, and 45-foot lengths to the Venezuela Development Corporation.

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## Standards . .

. . . . today's answer to residential lighting

**LOW COST . . . .** There's simplified installation with precast butt foundation . . . no footings required . . . just drill, set, and tamp in place.

**BEAUTY . . . .** The attractive granite finish of Hy-Lite lighting standards enhances any neighborhood.

**ECONOMY . . . .** Many cities boast 25 years of maintenance-free service from an American Concrete installation.

Here in Memphis, Tennessee . . . Hy-Lites will retain their "new look" year after year. To learn more about Hy-Lite features request Catalog No. 300. Write: American Concrete Corporation, 5092 North Kimberly Avenue, Chicago 30, Ill.

**American Concrete**

PRESTRESSED CONCRETE LIGHTING STANDARDS

# A Utility Wakes Up Its Regions at Night

By R. E. BALLARD
*Street Lighting Engineer*
*Conn. Light & Power Co.*
*Hartford, Conn.*

UTILITY companies and municipal officials have a fundamental interest in common—the welfare and progress of the communities they serve. A tangible way to achieve these good community qualities is to install Illuminating Engineering Society code street lighting.

Up to 1948, equipment shortages made it impossible to maintain existing equipment, let alone install new facilities. Then, with the relaxing of priorities on various metals, the demands of both maintenance and new orders could be met.

Any street-lighting installation requires knowledge of engineering. The utility companies have engineering departments and it is their officials who determine the kind of street lighting needed to meet today's requirements in specific communities. All benefits from code street lighting stem from correct engineering and design.

### Survey Conducted

The Connecticut Light and Power Company has recognized its responsibility over the years and, through surveys of street lighting, supplemented by our recommendations, we have attempted to provide authoritative data for community officials interested in improving street lighting.

However, a 1953 analysis of street lighting in our service area revealed the need for a drastically accelerated educational program.

Vehicles registered in Connecticut had increased 67.3% between 1945 and 1953; operators licensed in the state had increased 50.5%; night accidents and crimes had also increased. New street-lighting installations lagged far behind the above needs for illumination.

### Code Street Lighting for Modern Living

Connecticut Light and Power Company originated a plan to educate municipal officials in the 110 towns and cities we serve to the facts of better lighting. The plan showed how existing installations could best be brought up to date. It included:

- Evening dinner meetings for city officials.
- Newspaper promotional advertising.
- Coverage in State and National publications on noteworthy installations.
- Items of interest in company bill inserts.

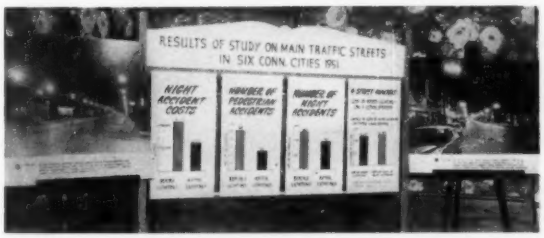
The meetings began early in 1954 and were scheduled in each of our 12 districts, with all officials from each town in the district being invited. Each district manager supervised the meeting and was the host for the evening. Letters of invitation were sent to each municipal official by the manager. Out of a total of 537 invitations only 37 people did not attend.

The speaker for each of the meetings was furnished by General Electric Company whose Outdoor Lighting Department was then located at West Lynn, Mass. His talks touched on:

- Reduction in accidents
- Reduction in crime
- Increased community pride
- Increased business
- Increased real estate values.

The film, "Out of Darkness," was shown in conjunction with the discussion and graphically illustrated the speaker's remarks.

Practically all of the men attending these meetings recognized the lack of adequate lighting. Most of them


RESULTS OF STUDY ON MAIN TRAFFIC STREETS IN SIX CONN. CITIES 1951
NIGHT ACCIDENT COSTS
NUMBER OF PEDESTRIAN ACCIDENTS
NUMBER OF NIGHT ACCIDENTS

**Here is chart display typical of those used by the Connecticut Light and Power Company in its series of educational meetings aimed at educating municipal officials in the towns and cities it serves to the need for good lighting.**

did not know about the effectiveness of code lighting in improving community welfare and achieving progressiveness. Every possible means was used in order to keep the presentation on a state level. For example, whenever possible, Connecticut statistics based on accident rates before and after relighting were presented.

The public officials were enthusiastic and appreciative. Some asked right off for surveys of streets and towns.

The most important accomplishments of the meetings were the development of confidence between The Connecticut Light and Power Company and the municipal officials and the recognition of code street lighting as a part of prosperous living.

In 1955, a panel of four speakers presented the formal part of the program. The Travelers Insurance Company, General Electric Company, and The Connecticut Light and Power Company furnished the speakers, and their subjects were:

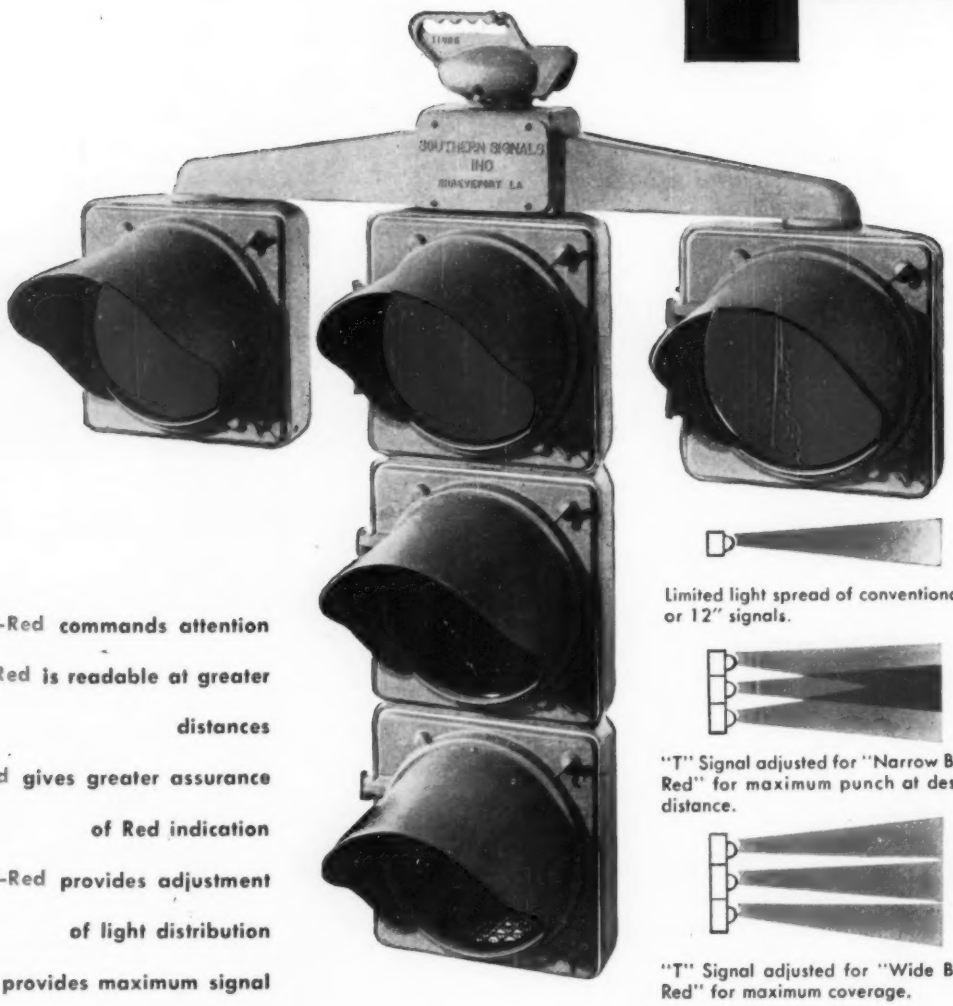
- Travelers Insurance Company
  - Guiding the Misguided Missile
- General Electric Company
  - National Street Lighting Progress Report
- Connecticut Light and Power Co.
  1. Street Lighting and Progressive Community Living
  2. Street Lighting Progress in Connecticut.

Now our 1956 program is under way. The aim is the adoption of code street lighting by each of the communities we serve. Each meeting presents a street-lighting survey based on the recommended practice of the Illuminating Engineering Society. Following a dinner, the representative of General Electric Company

# AUTOFLOW

## Type T Signal

# T Red

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T-Red gives greater assurance of Red indication

T-Red provides adjustment of light distribution

T-Red provides maximum signal efficiency for modern application



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discusses "Code Street Lighting" in lay terms. It is a concise explanation of the recommended practice of the Illuminating Engineering Society, its objectives and application. The Connecticut Light and Power Company street lighting representative presents the survey, along with a 3- to 5-year plan to accomplish the recommendations of the survey. The presentation is dramatized by a three section display panel featuring a map of the town and CL&P's recommendations for improvement. Shadowboxes on each side of this map contain transparencies illustrating code lighting on streets of the various code classifications.

Within four years, all towns will have been surveyed, and meanwhile, even more factual data are made available to prove that code street lighting does add to the wellbeing and progress of any community.

## 30-Million-Candle-Power Lamps Flash Twice a Second

LOGAN International Airport in Boston, frequently closed down by fog, has installed a lighting system which penetrates fog yet never blinds the pilot. In explaining the airplane-landing lighting system, technically known as EFAS (Electronic Flash Approach System)—S. Chris Peek, engineer at Sylvania Electric Products Inc., Salem, Mass., stated that the Civil Aeronautics Administration had approved the installation of an electronic flash landing plan at the Boston airport. A similar system has been operating successfully at Newark (N. J.) Airport for several years on an experimental basis, and another was installed in 1955 at Idlewild Airport, New York depot for international planes.

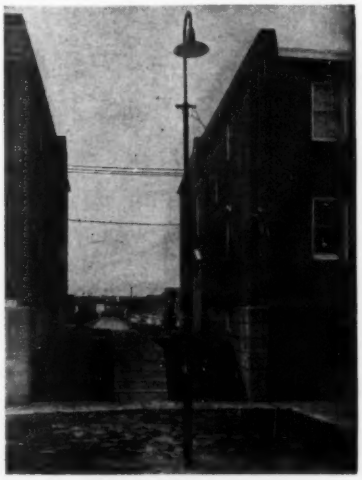
This fog-lighting system supplies to the airplane pilot a bullet of high-intensity light leading directly to the center of his landing strip after he has been brought down within approximately 3,500 feet of the field by ILS or GCA.

The EFAS lighting system at Boston provides a 1,200-foot line of electronic discharge lamps which instantaneously reach 30 million beam candle-power. Placed at 100-foot intervals, they flash toward the runway in a sequence of 2,600 miles per hour. These lights, although intense, do not blind, and permit the conventional steady-burning incandescent approach lights, with which they are used, to be reduced to low levels during the heavy night fogs to avoid glare.

The result is that pilots 3,000 feet from the landing strip see an animated arrow of light darting twice a second toward the middle of the airstrip to guide them to safe landings.

## 4,000 Gas Lights to Go in Four Years

AROUND 9,300 electric alley lights have been installed in Philadelphia since 1933, replacing many gas lights. The 60-watt lamps in these units are turned on and off automatically by Tork astronomical dial time switches. A switch mounted on each light post turns the lights on at sunset and off at sunrise, without need for manual resetting of the clocks. This time switch is entirely mechanical and is accurate to within 2 minutes of the sun's daily changing schedule. Some 4,000 gaslights remain in alleyways



**Typical alley light that is replacing Philadelphia's gas lights at the rate of 1,000 per year.**

and will be converted at about 1,000 per year. We're quite confident that within four years, we'll have seen the last of them.

Electric power for the alley lights comes from the Philadelphia Electric Company, without metering, and is paid for at $4.90 per lamp per year. At the latitude of Philadelphia the lamps operate 4,200 hours per year. Tork astronomic time switches, by The Tork Clock Co., Inc., Mt. Vernon, N. Y., are mounted on posts about 8 feet above-ground, in a weatherproof aluminum housing. Posts are 10-foot pieces of 3-inch wrought iron pipe, embedded in 30 inches of concrete with a cross rod through pipe in the concrete to provide tight anchorage.

HAROLD E. MASON
*Street Lighting Engineer, Philadelphia, Pa.*

## New Lights Bring Safety to Brookline

HOWARD BASSETT, assistant director of street lighting in Brookline, Mass., where all local streets have been relighted in recent years to conform with or exceed the minimum good-lighting standards recommended by the Illuminating Engineering Society, said that the town's relighting program was voted in order to cut auto accidents and control a mounting crime problem. Those streets showing the highest incidence in both classifications were the first to receive new fixtures and increased illumination. The reaction was immediate.

Accidents fell off sharply, and co-ed students and nurses using the local streets to and from a nearby college and hospitals confidently travel on foot in safety during the hours of darkness.

Kenneth Glass of the Detroit Edison Company, chairman of the I.E.S. streetlighting committee, in commenting on this installation said that "the Brookline relighting program is worth three to five squad cars to the local police."

# Bad Crossings...

# call for PLASTIX

## NEW Plastix Catalog

Gives you the complete Plastix story—all the details about the many Plastix standard shapes, prefabricated letters, numerals, symbols and letters . . . where and how to use them for pavement markings of all kinds. Fully illustrated with photographs, charts and drawings. Just write for Plastix Catalog No. PX-56

**Blacked-out pavements** at intersections are danger zones. You can easily change the picture and cut down pedestrian accidents by installing Prismo Plastix permanent-type reflective pavement markings at all crosswalks.

Plastix is an extruded thermo-plastic material uniformly impregnated throughout with microscopic optical glass spheres. It shines out bright and clear at night, and its sparkling brilliance is undimmed by fog, smog, drizzle or downpour. Application is fast and simple, and within a short time Plastix actually becomes an integral part of the road surface. Even pavement faulting will not affect Plastix as it is capable of resealing itself.

From the moment it is put down, Plastix gives maximum reflectivity, which normally lasts four or more years. Plastix provides traffic engineers with *the* economical, effective and long-lasting reflective material for modern traffic pavement marking requirements.

The SPHERE of SAFETY

# PRISMO SAFETY CORPORATION

HUNTINGDON, PENNSYLVANIA

# San Antonians Told When to Walk

By STEWART FISCHER, *Traffic Engineer*
*San Antonio, Texas*

THE problem of installing a completely new signal system for a city of a half-million people involves many serious engineering decisions. However, since the entire system for San Antonio will be new, we have greater flexibility of choice than if it were necessary to incorporate in the design certain items of existing antiquated equipment. The quantity of equipment needed for the system covering 184 intersections is large enough to ask for manufacturing modifications if we find them desirable. Consequently, our new system will be designed and assembled for our specific needs.

In the design of a traffic signal system, one is often prone to overlook—or at least subordinate—the pedestrian in relation to vehicular traffic. But, in San Antonio's new system, we have found it possible to tailor the equipment to the needs and desires of both. The attention to detail, such as the pedestrian controls outlined below, will make this system the finest.

One of the first conclusions reached in our study of the pedestrian signals to be used was that lenses reading "Wait" and "Walk" would not be satisfactory. At a distance, it is extremely difficult to distinguish the difference in these two messages. A more desirable instruction would be "Don't Walk" and "Walk."

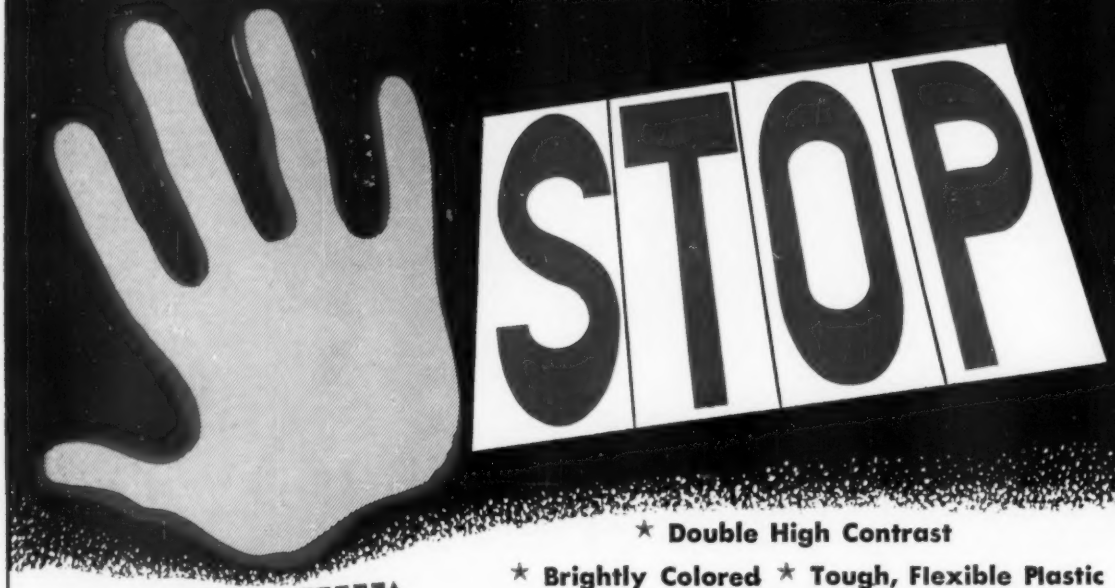
Standard round lenses are unsuitable in pedestrian signals for two reasons: it is impossible to use large enough letters on these lenses, and they resemble too closely the lens used in traffic signals. It was determined, therefore, that the lens used should be either square or rectangular to provide the most recognizable signal possible.

Requests were sent to the various signal manufacturers asking them to furnish sample signals in accordance with our preliminary requirements. It was in-

**San Antonio tests the visibility of various pedestrian signals at one of its busy intersections. The WinkoMatic pedestrian signal is seen in close up in the photograph above.**

# Introducing NEFMATS*

## For BETTER TRAFFIC CONTROL!




★ Double High Contrast

★ Brightly Colored ★ Tough, Flexible Plastic

★ One-Piece Traffic Letter Mats

★ Reflective ★ Quickly Installed

**dramatic proof!**

**NEFMATS** are made of the same highly durable plastic as their famous companion product, **NEFSLABS**. These "traffic-tested" markers, strips, and arrows will wear and wear, as evidenced by case studies of **NEFSLABS** taken in numerous metropolitan areas. Proof is yours for the asking. These studies reveal that **NEFSLABS** color permanence and reflective visibility provide increased traffic safety.

**NEFGLU** is applied easily and quickly by using your existing paint equipment, or by brush. Used straight from the can, it requires no complicated equipment whatever.

**NEFMATS** are rolled out in one piece. Each letter is permanently flush-fit in its background mat. Never any marking, cutting, or piecing.

**NEFMATS** are permanently bonded to the road surface. By merely rolling over the mats, permanent adhesion of mat to road is accomplished. That's all . . . now traffic may go, go, go!

*TRADEMARK APPLIED FOR

**J. W. NEFF LABORATORIES, INC.**

STOCKERTOWN 1, PA.

tended to give the manufacturer the greatest amount of freedom possible in designing a type of signal for our use. These sample designs were all mounted at one intersection, as shown in the accompanying photograph. To insure that full line voltage would be available, an independent electrical service connection was installed and connected to the signals through relays operated by the existing control circuits. The types of signals tested included two that were illuminated by incandescent bulbs behind both 9-inch and 12-inch square lenses, several containing formed neon letters, and several more using translucent letters on an opaque background illuminated by two differently colored neon grids. These signals were tested for their legibility and for their ability to get attention in competition with commercial advertising signs. They were observed in the daylight and at night in order to determine their effectiveness under all conditions. As a result of these tests, it was determined that the most desirable signal was the type using translucent letters in front of neon grids.

San Antonio's signal system will use a modified "scatter" type of pedestrian control at some of its intersections. Because of this, it was decided that the colors used in the pedestrian signals should be different from the conventional red and green used in traffic signals so as to eliminate any possibility of confusion. After considering several color combinations, it was decided that orange should be used for "Don't Walk" and white for "Walk." These colors were found to produce the greatest contrast and brilliance possible.

Specifications based on these findings were prepared and bids were requested for approximately 800 signals. The award was made to the low bidder, the Winko Matic Signal Company, which met the specifications. The entire system it is expected, will be placed into operation by January 15, 1957.

## The Habitual Traffic Violator

IS the habitual traffic violator psychotic, neurotic, moronic? Or have the attitudes of the violators little to do with violations or accidents?

To find an answer, a study was undertaken by the Institute of Transportation and Traffic Engineering at the University of California at Los Angeles in cooperation with the Municipal Traffic Court of the City of Los Angeles and the Department of Motor Vehicles of the State of California. The method has been described by Harry W. Case, Ismar Reiter, Ernst A. Feblowicz, and Roger G. Stewart. The procedure consisted of interviewing, just prior to their court hearing, motor vehicle operators who had a multiple-violation record. The operator was told that his participation was entirely voluntary. If he wished to cooperate, he could answer a number of questions concerning himself and his traffic record. During the entire 12-month period in which the study was conducted, only two individuals failed to participate in the experiment. All of the individuals were told that the experiment was connected in no way with the court and that it would have no bearing upon the the ensuing court action.

The interviewers were two doctoral candidates in psychology attending UCLA. Both had had extensive interviewing experience prior to working on this study. All individuals interviewed were selected on the basis of multiple moving violations within the past 12 months.

Intelligence was divided into six categories, ranging from dull to decidedly above normal. The personality evaluation consisted of placing the individual, on the basis of the interview, in one of the following categories: withdrawing, conforming, normal, aggressive, hostile, unknown.

The 300 cases on which this study is based received 1,774 recorded violations during the 12-month period up to the last citation. 1,341 (76%) were of the moving type, while 369 (21%) were of the nonmoving classification. The remaining 64 (3%) were violations of the municipal code rather than of the state motor-vehicle code. All data reported in this study concern only violations of the state motor-vehicle code.

Of the 1,341 moving violations, the greatest percentages were: 38% for failure to heed traffic-control devices, 26% for speeding, and 17% for violations of the right-of-way. Of the violations for failure to heed traffic-control devices, 62% were issued for failure to stop at a red light and 37% were for failure to stop at a stop sign. The five most frequent violations, which account for 53% of total violations are listed below:

| | |
|---|---|
| Running red light | 310 |
| Speeding in 25-mph zone | 291 |
| Failure to stop at stop sign | 184 |
| Left turn at intersection, turner must yield | 83 |
| Left turn from wrong lane | 81 |

Estimated intelligence based on the content of the interview, educational level, and occupation, revealed that 57% were normal. Their personality revealed essentially the same thing (58%).

The second part of the study consisted of attempting to ascertain the offender's attitude toward the law; toward police enforcement; his concept of himself with regard to driving; his concept of a good or bad driver. The individual's concept of himself as a driver resulted in some interesting revelations: 86% thought that they were at least fair drivers. When asked as to how they could improve their driving they answered: "be more careful;" "watch traffic lights;" "look out for the police;" "stop driving" (4%).

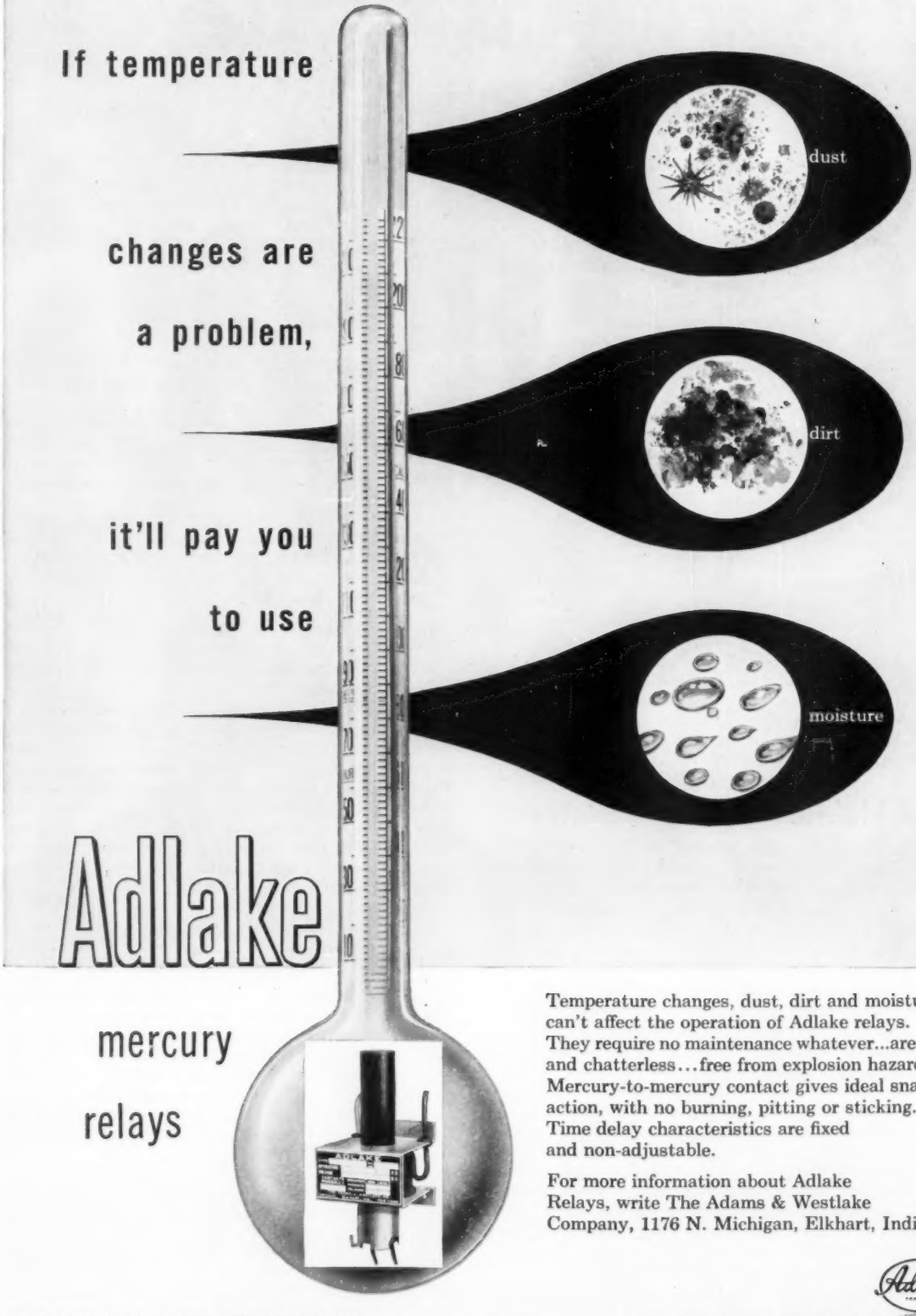
## Portable Signals Successful

SO many signalized locations within Los Angeles create many reasons why a signal may be off. This might happen from malfunction of the controller, short circuit of cable, an accident which has torn down a controller or one of the signal indications, or other causes. When the permanent signal is out of operation, the department of traffic controls traffic at the intersection by portable traffic signals, placed in the center of the street.

So successful has been the performance of these portable signals that the department now has 12 of them apportioned to its four outlying district yards. Trailers are provided for these signals, and when a traffic emergency crew is confronted with a signal out of operation, they radio the shop to have a portable signal delivered immediately. This has done much to minimize accidents and maintain a smooth traffic flow.

LLOYD M. BRAFF, *General Manager*
*Department of Traffic, Los Angeles, Calif.*

If temperature changes are a problem, it'll pay you to use




Adlake

mercury relays

Temperature changes, dust, dirt and moisture can't affect the operation of Adlake relays. They require no maintenance whatever...are quiet and chatterless...free from explosion hazard. Mercury-to-mercury contact gives ideal snap action, with no burning, pitting or sticking. Time delay characteristics are fixed and non-adjustable.

For more information about Adlake Relays, write The Adams & Westlake Company, 1176 N. Michigan, Elkhart, Indiana.

THE ADAMS & WESTLAKE COMPANY ELKHART, INDIANA
New York • Chicago • Established 1857

the original and largest manufacturers of mercury plunger-type relays

Adlake

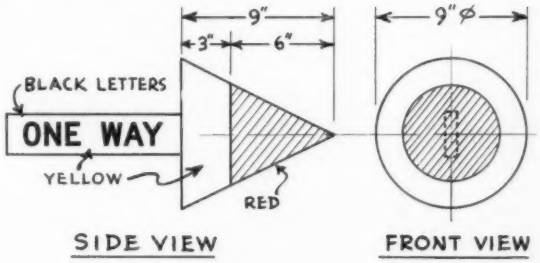
99th year

## Don't Crystallize on Traffic Signs

A CONTRIBUTING cause of vehicular accidents is the ineffectiveness of our street signs. A case in point is the "Oneway Sign." Usually this is a flat metal plate in the shape of an arrow. The indicated direction is easily discernible from a position directly facing the sign, but not from any other.

One answer to this problem would be a three-dimensional sign employing color as the key directional indicator. A flat arrow could still be used as the basic shape, with this change: covering the arrowhead would be a steel cone about 9 inches deep with a 9-inch diameter base. The forward 6 inches would be painted red and the rear 3 inches, as well as the shank of the arrow, yellow with black "one-way" letters.

Thus, from a head-on position the driver and pedestrian would be confronted with a solid red disc surrounded by a yellow circle. From any other direction the shape and the relative position of the red to the yellow will surely help in indicating the direction.




In order to make street signs more effective there should be more dramatic use of both color and shape.

GEORGE DAVID PARIS, *Squad Leader, Municipal Dept. Morse Boulger Destructor Co. New York* 11, *N. Y.*

## Fire Truck Controls Traffic Signals

A NEW radio traffic-light-control system is being offered for the protection of municipal emergency vehicles. Control is from the emergency vehicle as it approaches the signalized intersection.

The "Natecs" system offered by Eagle Signal Corp., Moline, Ill., consists of a transmitter, a receiver, and a pre-emptor. A transmitter is mounted on each emergency vehicle in use by the city. A radio receiver is usually mounted on one of the signal heads at each intersection. One receiver is required for each direction of approaching traffic. The pre-emptor, which actually operates the emergency condition of the traffic signals, is installed at the controller for each intersection. In addition to this control equipment, an interrogation light is installed (one for each direction of approaching traffic) on or near the traffic signals.

When the transmitter, mounted on the emergency vehicle, is turned on, a high frequency signal is transmitted up to a quarter of a mile ahead of the vehicle. It permits beamed directional control with a very limited spread so that intersections on parallel streets will not be affected.

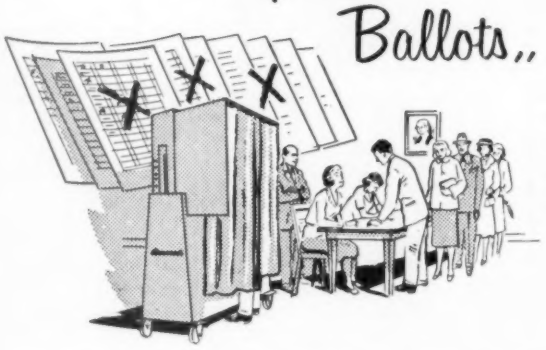
As the vehicle approaches the Natecs-controlled intersection the transmitted signal is detected by the receiver and is relayed to the pre-emptor unit at the intersection control box. At this time the pre-emptor assumes command of the traffic signals in a predetermined pattern. Simultaneously the interrogation light facing the oncoming emergency vehicle is turned on by the pre-emptor, assuring the driver that Natecs has established control of the intersection. If two or more emergency vehicles approach the same intersection from different directions, the interrogation light which faces the direction of the first vehicle approaching the intersection will remain steady but will flash on and off in the direction of the second vehicle telling that driver to proceed with caution.

A relay in the pre-emptor maintains the emergency control for a time after the passage of the emergency vehicles. Then signals are returned to normal operation.

**The Eagle NATECS System operated by fire truck stops traffic with red lights in all directions. A white light signals the emergency vehicle that the intersection is clear and that it can proceed across.**

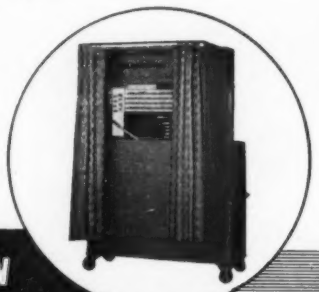
# EVERY VOTE COUNTED—

## No Spoiled Ballots,,



At each election, many PAPER BALLOTS are invalidated because of

1. Voting for more than the proper number of candidates.
2. Distinguishing marks which can be construed as identifying the ballot.
3. Erasures to correct mistakes.
4. Use of a pen instead of a pencil.
5. Failure to place cross mark fully within the voting square.



More than 7,000 cities and towns have found that these errors may be completely eliminated and every vote counted, through the installation of AUTOMATIC VOTING MACHINES.

**AUTOMATIC VOTING MACHINE CORPORATION**
JAMESTOWN, NEW YORK

---

# in signs...it's what meets the *Eye* that counts!!

## MIRO-FLEX SIGNS
### ARE EMBOSSED
### SO THAT THEY ARE EASY TO READ!

Yes, MIRO-FLEX signs are embossed for greater legibility as well as extra strength. This extra dimension not only makes them more readable, but gives you a quality sign... one that will serve your community well, and provide you with more efficient traffic control. Write today for your free copy of MIRO-FLEX's complete catalog of traffic control signs. There's a sign for every situation.

*Standard Traffic Signs Available for Immediate Delivery at Northeastern Warehouse*

**KOONTZ EQUIPMENT CORPORATION**
325 Ohio River Blvd., Emsworth
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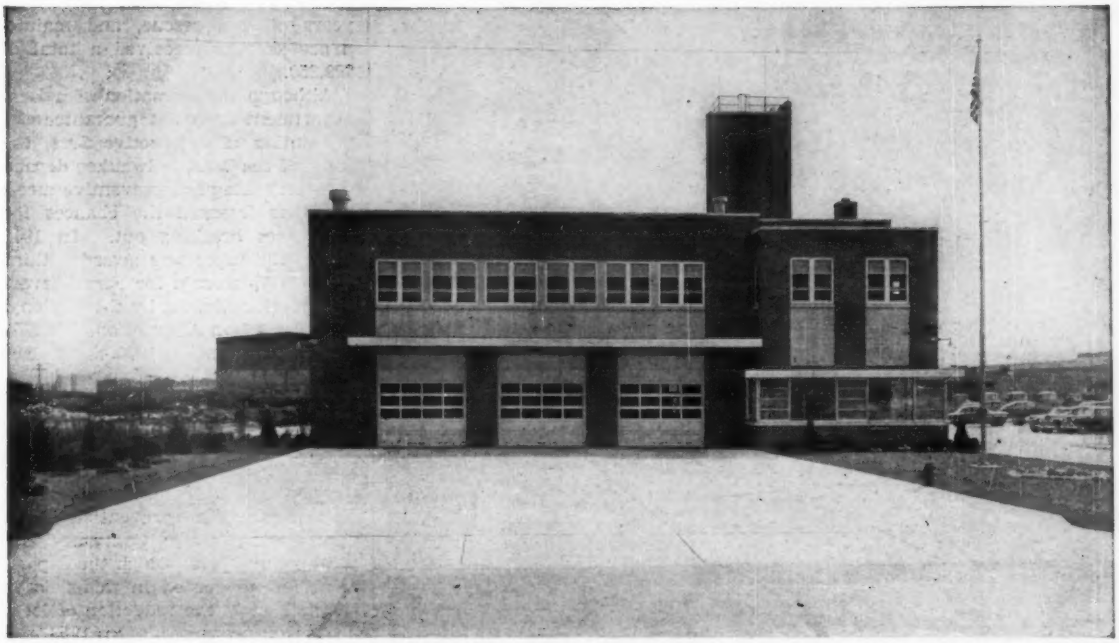
THE **MIRO-FLEX** CO., INC.
1824 EAST SECOND WICHITA, KANSAS



The platform in front of the fire station permits driving straight out and gives the driver full view.

## *West Milwaukee's*

# *Fire Department Five Years Old*

By JOHN PAVLIK, *Chief*
*Fire Department*
*Village of West Milwaukee, Wis.*

AT the start of 1951 West Milwaukee was the only municipality in Milwaukee County without a full-time or volunteer fire department. Fire protection had come from West Allis since 1912 and from the City of Milwaukee since 1925, at costs below those which normally would have been incurred in maintaining its own department. Then West Allis decided to curtail its fire department service to outside communities. From Milwaukee came notice that a reexamining had begun of the charge for suburban fire protection.

In September 1951, the Milwaukee Common Council required suburbs without fire departments to pay annual fees for fire protection based on their equalized assessed valuation multiplied by the Milwaukee rate per $1,000 equalized assessed valuation for fire protection. Under this new plan, to become effective January 1, 1952, the charge to the village for fire protection service during 1952 would have been approximately $170,000. Meanwhile, the village's first annexation since 1931 was confirmed and brought into West Milwaukee an industrial area of major fire hazards.

### We Do the Practical Thing

The most practical answer was to establish a village fire department. This was done on March 20, 1951, and John Pavlik was appointed first fire chief.

Fighting to beat the deadline on which the new Milwaukee protection charges would go into effect, the officers selected the village garage as the location for a temporary fire station to house department personnel and two engines, a truck, and some used hose purchased from Milwaukee. The personnel included the officers and nine fire fighters of the original 400 applicants who passed a series of examinations. Present apparatus consists of a 100-foot aerial ladder truck, a 1,250 gpm and two 750-gpm pumping engines, all Seagrave.

During that first year, the department responded to 261 alarms. The largest and most costly fire occurred April 20, 1952, at the Central Building Products Co., with damage estimated at $126,000.

Milwaukee was paid $18,000 for its assistance in fighting this blaze. If there had been no village department, the city's bill would have been $450,000 in contrast to the local department's budget of $109,000. In its 25 years of fire protection service to the village, Milwaukee was paid a total of $64,275, with most of this amount originating in a $300-an-hour charge for each fire apparatus re-

## To enforce this...

## you need CYCLONE FENCE!

To enable more people to use and enjoy all types of municipal recreation areas, good supervision and regulation are required. And part of such regulation is accomplished by good fencing. Cyclone Chain Link Fence enforces opening and closing hours, promotes fair sharing of facilities and, in the case of the tennis court, serves as a fine backstop.

Because Cyclone Fence is a quality product, it is a worthwhile investment that pays off in years of trouble-free, maintenance-free service. Cyclone gives full value for your dollar. Nothing but brand-new, top-quality material is used throughout. Posts and top rails are heavy and rigid. Gates won't drag. Every part of Cyclone Fence is heavily galvanized to offer greater resistance to rust and corrosion. The Chain Link Fabric is galvanized after weaving, leaving no bare spots that would encourage rust.

If you have a municipal fencing problem, get in touch with a sales office of Cyclone Fence. Our skilled technicians will be glad to help without obligation on your part.

**NO JOB IS TOO LARGE—NO JOB IS TOO SMALL FOR CYCLONE***

CYCLONE FENCE DEPARTMENT, AMERICAN STEEL & WIRE DIVISION
UNITED STATES STEEL CORPORATION
WAUKEGAN, ILLINOIS · SALES OFFICES COAST-TO-COAST
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

*Only United States Steel Corporation Manufactures Cyclone Fence. Accept No Substitute.*

**USS CYCLONE FENCE**

UNITED STATES STEEL


sponding. West Allis, for its 39 years of fire, rescue, and maintenance services, received a total of $99,850.

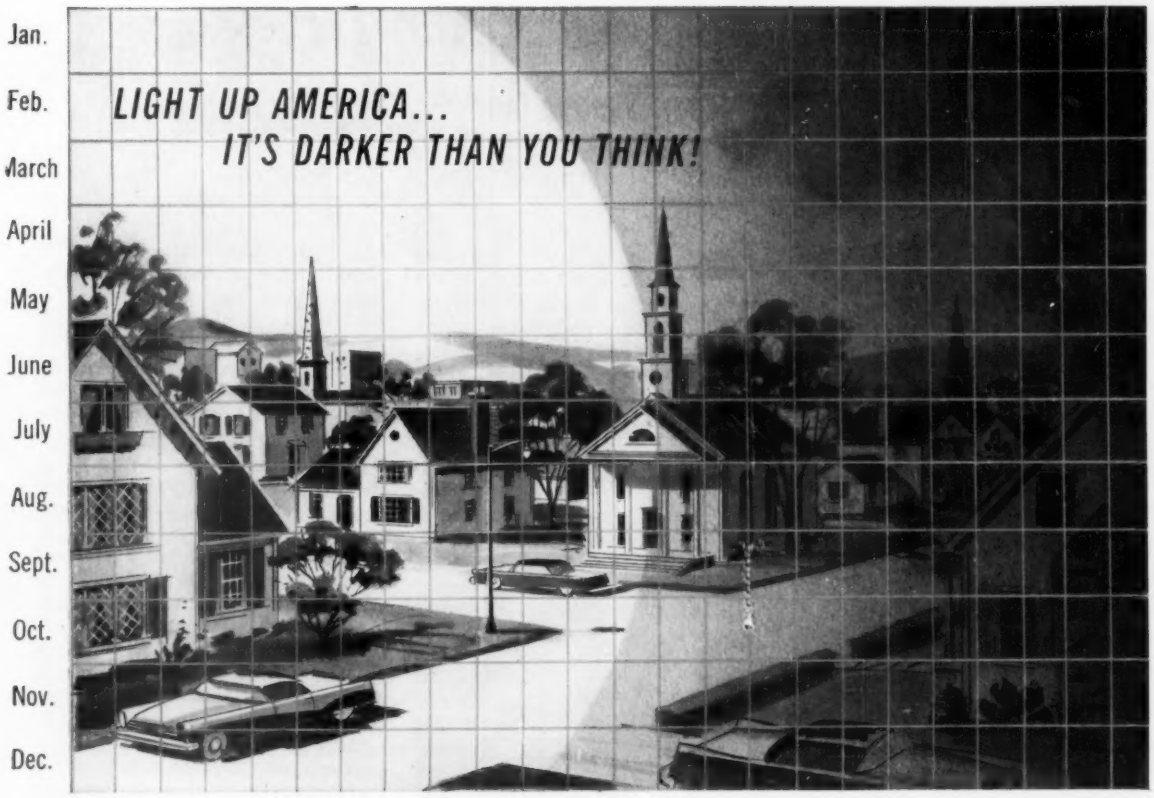
Although the formation of a local department does not guarantee the prevention of destructive fires, the work of the West Milwaukee department in taking fire preventive measures has lessened the chances for such fires breaking out. In 1953 West Milwaukee was awarded third place in Wisconsin for Fire Prevention Week activities by the National Fire Protection Association. In 1954 second place and in 1955 third place in Wisconsin.

The United States Chamber of Commerce awarded West Milwaukee second place in 1954 and first place in 1955 in the United States in the population class under 20,000 for all-year-round fire prevention in its annual Fire Waste Contest. The thoroughness with which the department has proceeded in this field is exemplified in the reduction of local fire insurance rates. In 1953 the village was surveyed and regraded by the Fire Insurance Rating Bureau to Class 4, bettering its insurance classification by two whole classes.

A new fire station is part of the program to bring West Milwaukee, Wis., from its position of 1951 with no fire department to a fire department equipped to take care of the needs of 5,000 residents and 13,000 employees and protect property valuation of $103,000,000.

Three years of planning were put into evaluating the needs of the community and the preparation of a fire station to meet these needs.

It is a two-story, red faced-brick building with a one-story block shop attached to the rear. It contains facilities for training of personnel and also for drying fire hose at full length. The building contains only a partial basement located under the alarm office and commanding officers' office and quarters. The main room is 84 feet wide and 76 feet long with a floor of red concrete. The shop building is 60 feet long and 55 feet wide. The fire station is set back from the street curb line 100 feet and has a concrete platform 100 feet long and 59½ feet wide. This permits the fire apparatus, when standing on the platform, to be clear of the crosswalk and street. This also permits apparatus to be driven out of the quarters straight; no turns are made while apparatus is still partly inside the building. Drivers have a better view of road and traffic conditions.




# How does your town plan to combat darkness?

In five out of six communities, shopping and residential streets which are pleasant and inviting in the daytime become dark and unattractive when night falls. "Horse and buggy" lighting cuts down the hours of business, reduces social activity, keeps away visitors, and sets the stage for juvenile delinquency, crime, and accidents.

That's why hundreds of civic leaders across the nation are sponsoring good lighting in their towns. Adequate street lighting has already proved that its benefits far outweigh its moderate cost. Brightly lighted shopping streets act as a magnet, pulling buyers from miles around. Community life is quickened when streets are safe for pedestrians and drivers. Crime is reduced. Nighttime accidents are fewer.

People know that the well-lighted town is a progressive town—a good place to live and to establish business and industry. Why not find out how much good lighting can do for your community?

**"Out of Darkness,"** a new, dramatic film story of how one community met its street-lighting problems, is now available to civic groups, community service organizations, etc. This 16-mm, sound, black-and-white movie runs 26 minutes. Borrow a print of "Out of Darkness" from your nearest G-E Apparatus Sales Office.

**Section P455-12**
**Outdoor Lighting Department,**
**General Electric Company, Schenectady 5, N. Y.**

Please send me a free copy of the 24-page bulletin, "Light the Way to a Better Community," GEA-6047.

Name_____

Street_____

City and State_____

*Progress Is Our Most Important Product*

GENERAL ELECTRIC

**M**unicipal
**P**ublic
**R**elations

# *The City Tells Its Story*

Edited by PAN DODD WHEELER
*Executive Director, Government Public Relations Association*

## Michigan Awards to Roseville, Plymouth

FOUR hundred cities issued reports last year. And the figure is expected to rise at least another 100 as municipal officials report on 1956 action. To encourage reporting by Michigan cities, the Michigan Municipal League conducted an annual report competition for 1955-56 reports. Two of the six blue ribbon winners prove that best reporting is not confined to the big cities. Roseville (population 16,000) issued a magazine-type report, 8½ inches by 11 inches in size, which took first

## Big City Formats: Richmond Tabloid, Cincy Quarterly

WIDE distribution at minimum cost is a must when municipal officials of big cities decide on a report form. Reports via supplements to daily newspapers meet both requirements. So do offset reports of the sort issued by Cincinnati, Ohio.

The Richmond, Va., story was told in a tabloid supplement to the *Richmond News-Leader* in September. City-owned port facilities are featured and the cover photo, in blue and black print, is a Norwegian sugar ship unloading at the Deepwater Terminal. Broad columns—33 and 18 picas wide—and large clear type, along with plenty of pictures, characterize the report. Richmond's financial story is told in streamlined graphic form. This eyecatching, easy-to-understand presentation is titled, "Your best investment—the City of Richmond." The city public relations officer, Mrs. Ulrich Troubetzkoy, edits the annual report.

Cincinnati progress is told via a quarterly of the same name, issued every three months with the final edition of the year summarizing high-

## Philadelphia and Quakertown Win In Pennsylvania

"TIMES Change" and "The Road Ahead" are the respective titles of prize-winning reports (two of 22 which received awards) from the 1956 contest sponsored by the Institute of Local Government, Pennsylvania State University. Quakertown (population 6,000) report is a centennial issue whose 28 pages detail municipal operations via figures, narrative, and humorous drawings. The Quaker gentleman is used throughout the report as the municipal symbol. Manager Ralph L. Yanish says that too many reports are an "unappetizing mess of statistics" which are "read by few and understood by none except accountants." He feels that municipal officials not only have a responsibility to make a report but also "to make it interesting." The contest judges feel that Quakertown succeeded.

Philadelphia's June 1956, special section of the *Philadelphia Inquirer* ignores the stereotype that a newspaper report can't look as handsome as other types. Seldom has there been any kind of city report so graphically stunning as the 20-page tabloid

## Luxury Reports . . . Milwaukee, Memphis

CITIZENS sit up and take notice when something as striking as the new Milwaukee, Wis., report—with its covers and six other pages in full color—hits homes throughout the city. And Memphis' creative "Nucleus of the Mid-South" with color, line drawings, pictures, and a good story to tell is another report designed to capture and hold Mr. and Mrs. Citizens' attention. Both of these imaginative, colorfully presented annual reports are definitely in the luxury class cost-wise.

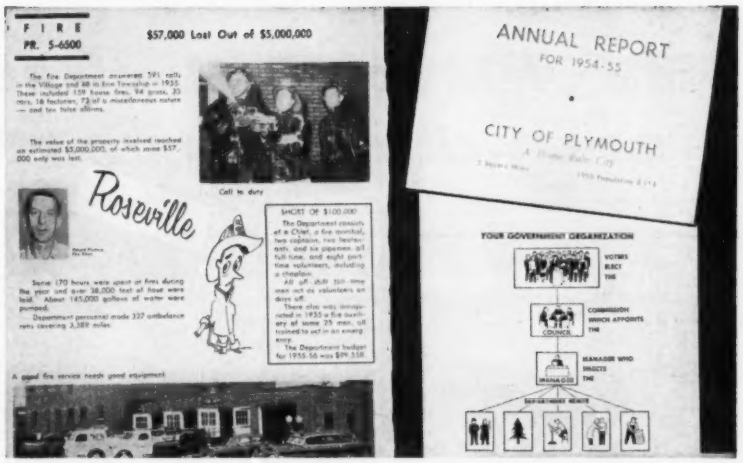
With the exception of two pages of terse copy, Milwaukee's 32-page, 8½-inch by 11-inch report is exclusively pictures and well-worded cutlines. Municipal operations are told via pictures under three groupings: Milwaukee lives, Milwaukee works, Milwaukee plays. This coup d'etat of the municipal administration was edited by Gerald Caffrey, city Reference Librarian.

Memphis' three-color magazine, also 8½ inches by 11 inches in size, features photographs, brief cutlines,

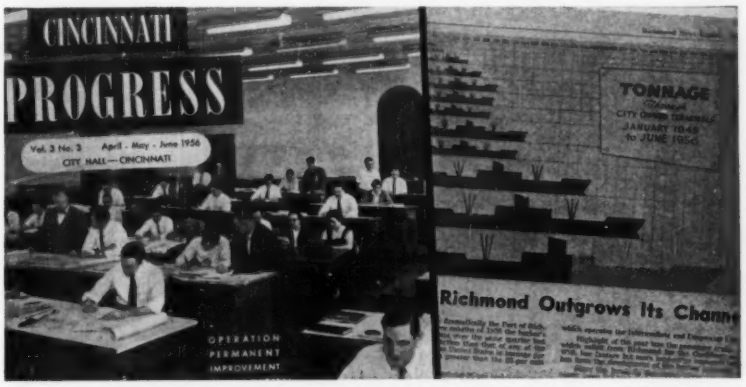
place in its population category. The report features "Mr. Roseville"—a cartoon personality. He is used throughout the 28 pages and on the cover in the costume of various municipal officials and employees. Small boxed items of incidental intelligence are scattered throughout.

Plymouth's 32-page, plus cover report is 6 inches by 9 inches, and tells the story of municipal operations in a community of 8,000 people. Large, clear pictures illustrate each page. And municipal workers and officials are doing something in each picture! This report is a self-mailer.

Other Michigan first place winners were Kalamazoo, Marysville, Vassar, and Roosevelt Park.

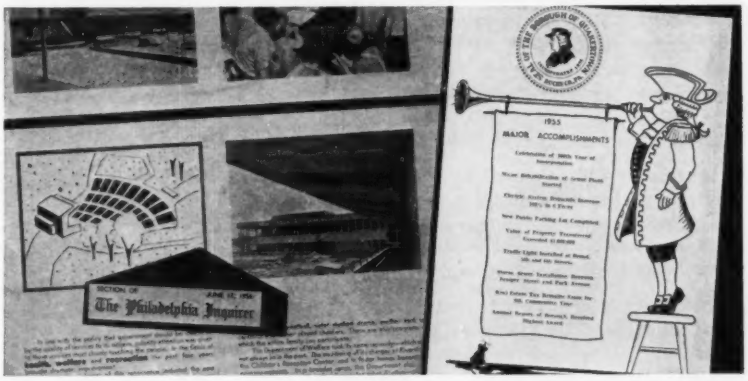



lights of the three prior reports. Lots of good pictures combine with charts and capsuled news items to make the report interesting to see and read. Focal interest is provided in each issue by a special report—for example: "Operation Permanent Improvement." In short-hand form this item provides the 36 steps from start to finish of a major public works improvement in the city. The 16-page booklets are offset printed, self-mailers, 8½ inches by 11 inches in size, and are provided to "the council and interested citizens."



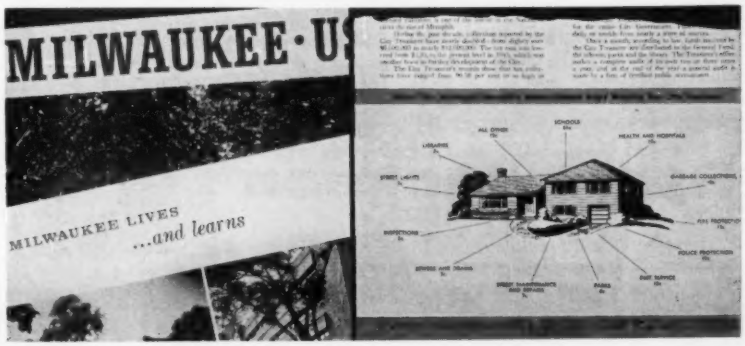

publication about the Philadelphia "road ahead." Solid blocks of color, lively drawings and charts, dramatically-cropped pictures, two-column pages and a total absence of headlines are innovations in this report. In lieu of headlines, the modern sans serif type, in which the body of the report is printed, is changed to extra bold type for certain key words.

This annual report covers both the administration of former Mayor Joseph Clark and present Mayor Richard Dilworth. Wayne Barr is information chief.



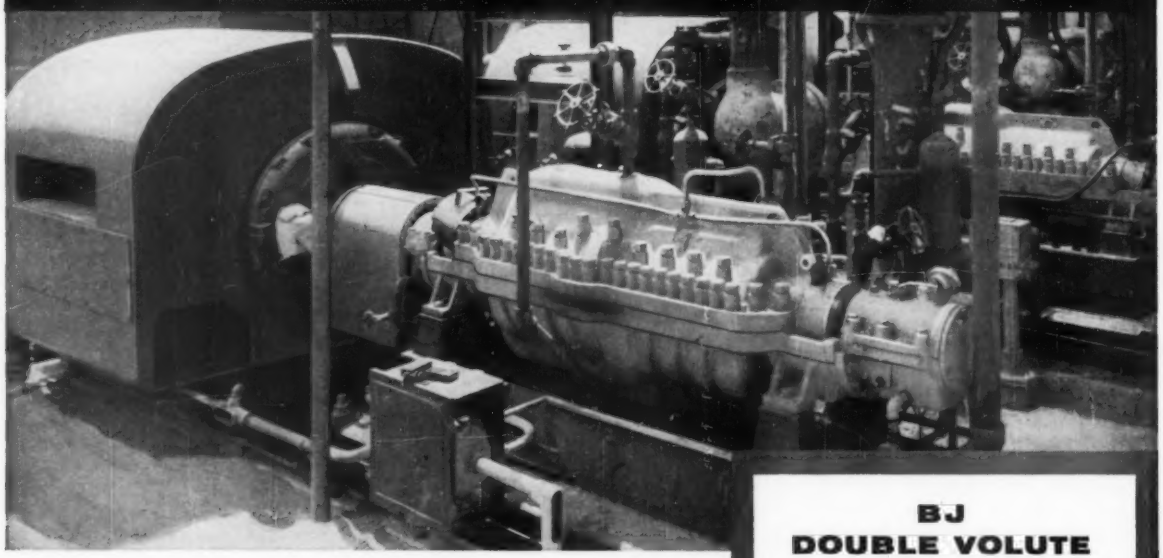

division headings no longer than five short words, and extensive narrative on each page. But the proportion of picture space to narrative space is about four to one!

The highly attractive cover drawing of the Memphis' skyline and an atomic "pattern" is in aqua, dark blue, red, and white. Inside pages are black and white with a second color accent (blue-green, gold, or red). This metropolitan city report contains 80 pages, plus the handsome cover.



# NEW Byron Jackson DVMX
## SPLIT CASE BOILER FEED PUMP

### ...Engineered for Medium Size Power Plants



This new Byron Jackson DVMX split case pump gives the same trouble-free service that BJ barrel type Boiler Feed Pumps have been providing for the larger power plants in the United States for many years. This DVMX model is engineered primarily for medium-sized power plants and delivers capacities to 2200 gpm, heads to 1200 psig. and temperatures to 350° F.

**Here's what you get in the new DVMX**

**1** Horizontally-split case, with both nozzles in the lower half of the pump case, permitting removal of the top half of the case and the complete rotating element without disturbing the piping.

**2** Double volute design which assures radial balance of the pump at all capacities.

**3** Impellers arranged in equally opposed groups, assuring hydraulic axial balance without resorting to the use of any auxiliary high pressure balancing devices.

**4** Available with reliable BJ high pressure Mechanical Seal especially designed for boiler feed service.

**5** Furnished with a spacer type coupling for easy removal of the mechanical seal.

**6** The thrust and radial bearings including the self-contained oiling system are of the same reliable construction that has proven so successful over the years in the larger BJ barrel type Boiler Feed pumps. The oiling system is of ample size to supply the driver bearings if desired.

**BJ**
**DOUBLE VOLUTE**

By the use of BJ Double Volute inner cases, the flow is divided into two identical fluid channels with outlets 180° apart. Equal opposing forces are created, resulting in radial balance without pressure-bending moment on the shaft.

**BJ MAKES BOILER FEED HISTORY!**

Byron Jackson is building the world's largest boiler feed pump. This 12,000 HP pump will deliver 6,330 gallons per minute at total head of 6,400 feet, or about 2700 pounds per square inch, at a speed of 3510 RPM.

**Byron Jackson**

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**BJ**

## *New England Towns Get Federal Planning Aid*

THIRTEEN SMALL New England municipalities, all with less than 25,000 in population will soon embark on urban planning with the aid of federal funds from the Urban Renewal Administration.

In Connecticut, the Connecticut Development Commission will help seven communities begin local urban planning programs with a federal grant of $23,740. In Rhode Island, nine towns will carry out planning work under the direction of the Rhode Island Development Council with a $24,000 federal grant.

The planning work in both states will consist of extensive surveys, studies and technical services aimed at orderly development of the communities. It will include economic base and population studies, land use studies and plans, over-all plans for community facilities and utilities, preparation of zoning, subdivision codes, development of public improvement programs and capital budgets, and circulation studies and plans. In addition, Rhode Island will undertake redevelopment planning for areas affected by the 1954 hurricane. All work is expected to be completed within a 12-month period.

### Assistance Program

Federal assistance is established by the Urban Planning Assistance program in accordance with the Housing Act of 1954. Under this program official state planning agencies may apply for federal grants for use in giving planning aid to local communities with less than 25,000 persons. The current grants bring to 210 the number of small municipalities participating in the program throughout 13 states. Connecticut communities who will enter the program are Berlin, Bolton, Canton, Colchester, East Windsor, Newington and Southbury. The Rhode Island towns include Coventry, East Greenwich, Lincoln, Narragansett, North Kingston, Smithfield, South Kingston, Tiverton and Westerly.

The two states had previously received similar grants for disaster-stricken areas. In 1954, Rhode Island received the first grant under this program, the sum of $16,000, for use in planning for the State's hurricane-stricken shore area. Connecticut had obtained three federal grants totaling $182,989 for communities which were so severely damaged by the 1955 floods.


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Car installation can be made in a few minutes and at low cost. Your regular auto radio antenna is used. Home sets merely plug-in like any radio.

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The impressive list of features proves that the VOLUNTEER is in a class of its own. Only the long experienced designers and builders of the famous PAK-FONE 2-way Portable, so widely used in municipal, government and industrial service, could offer so much value.

For complete information, contact your local 2-way radio service organization or write for literature.

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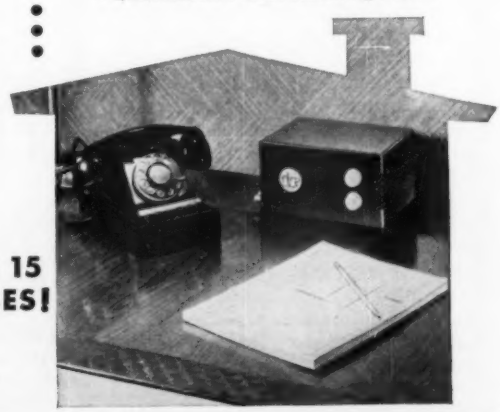
- **Beyond Compare in Performance and Cost**
- **Qualifies for FCDA Matching Funds**



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(Left) Patchogue's Bicycle Parade "marches" down Main Street before Rodeo time. (Center) A fire engine with an announcing siren, courtesy of the local Fire Department, heads the parade through the village. (Right) The Rodeo offers foot events to the village small fry in lieu of difficult bicycle races.

# "Bicycle Rodeo" Climaxes Summer Recreation

## *Small city stages small-fry event for* 150 *youngsters at a total cost of* $15

By JOHN T. PALACE
*Recreation Director*
*Village of Patchogue, N. Y.*

A BICYCLE rodeo and parade for youngsters climaxed the Patchogue, N. Y., Recreation Department's full-scale summer program which was offered for the first time this year. More than 150 Patchogue boys and girls under 16 years of age took part in the bicycle event. Since then, our Recreation Department has decided to make this an annual affair.

Patchogue's bicycle rodeo began with a parade in which the costumed children rode through Main Street on decorated bicycles to vie for prizes. The parade had the cooperation of the Police Department, while our Fire Department donated the service of a fire engine with an announcing siren to lead the march through the heart of the village.

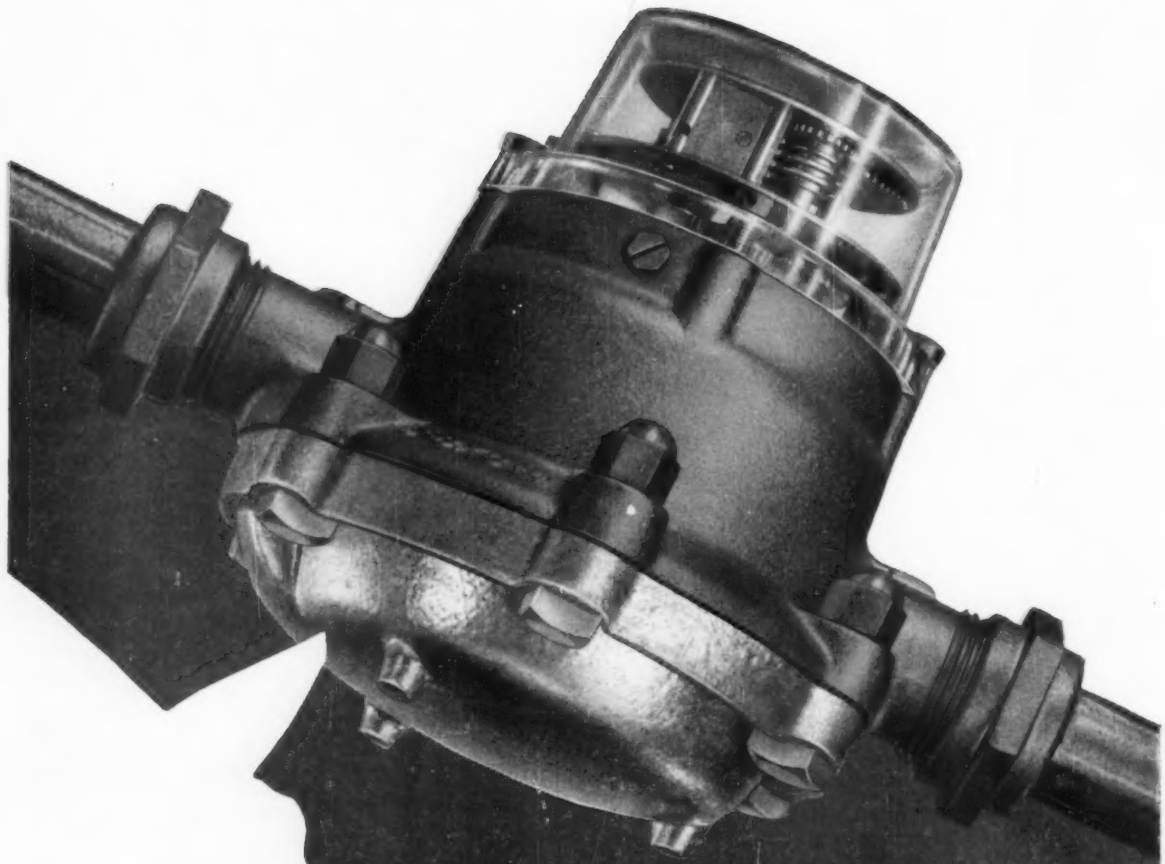
Following the parade, the youngsters romped through 34 events held on our eight-acre Shorefront Park. To encourage maximum participation from all children, we divided the events into six age groups. For those who were six years and under we offered foot events, like running bases and sack races in lieu of the more difficult bicycle races. For older children, bicycle events included speed races, snail races, water balancing, lance piercing, slalom, newspaper throwing, and umbrella races. We scheduled the events to permit all age groups to compete at the same time, so that no one group had to stand idle. Silver trophies were awarded to the winners.

Generous cooperation from village officials and interested local citizens helped to make Patchogue's bicycle program a success both recreationally and financially. The total expense of the event amounted to $15, which was spent on the prizes. Music at the parade was volunteered by the, American Legion Drum and Bugle Corps. We used our own trucks to transport the children and their bicycles to the rodeo site, while the bus service was donated.

A total of 16 men was required to supervise the event, about one for every 14 children. Of this, four were recreation department personnel; the remaining members were policemen, firemen, and villagers. In addition, Mayor George E. Lechtrecker and Chief of Police Dominick Chiuchiolo acted as judges for the parade.

The event, the first of its kind held on Long Island since World War II, has attracted considerable public interest. Our recreation department has received several queries from towns and cities for information about the program. We have hopes that Patchogue's example may help other communities establish similar programs of their own.

(Left) Here, older children, taking part in the bicycle events, try their skill at a different version of "grab the gold ring". (Right) The broad grinned happy faces of these children mark them as winners of the Patchogue Bicycle Rodeo. They are joined here by Police Chief Dominick Chiuchiolo, who acted as one of the judges, and by Recreation Director John T. Place.



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## Water-Wasting Air Conditioners Must Pay Surcharge

*(Continued from page 111)*

capacity, of "nonconserved" water-cooled air-conditioning units. If a nonconserving unit is installed between August 1 and September 1 of any year, the customer is charged $12 per ton; if the unit is installed between July 1 and August 1, the charge is $24 per ton; any unit installed prior to June 30 is charged at the full yearly rate.

However, if "nonconserved" air conditioning is converted to "conserved," the annual surcharge will be reduced by two-thirds for conversion between June 1 and June 30, and by one-third for conversion between July 1 and July 31.

The District defines the capacity in tons per 24 hours as the greatest of the following:

1. The manufacturer's rating in tons per 24 hours of equivalent ice-making capacity;
2. The 24-hour BTU rating of heat-removal capacity divided by 288,000;
3. The hp rating of the motor that drives the refrigerant compressor;
4. Ninety per cent of the hp rating of the motor driving both compressor and fan.

If none of these ratings are available, or if a question arises as to the accuracy of any rating, the rating shall be determined by measurement of power input to the compressor motor, the rate of gas consumption, or other suitable means.

## *Greenwich Integrates Town Retirement System With Social Security*

AFTER a year of preparation and deliberation employees of the Town of Greenwich, Conn. (population 40,836) recently voted overwhelmingly in favor of integrating their town retirement plan with federal social security. The adoption of social security entailed preliminary work for over a year and involved approval by the Town Board of Estimate and Taxation and the Representative Town Meeting, the passage of special legislation by the Connecticut General Assembly, and a considerable amount of municipal public information. Pamphlets explaining the integration plan were distributed to all town workers eligible to vote.

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## *Evacuation Poor CD Policy to Nagasaki Mayor*

THE MAYOR of Nagasaki, Japan, the second of the only two cities in the world to have been hit with atomic weapons, has little faith in evacuation as a protection against nuclear attack.

### Favors Shelter System

In a recent interview in New York, Mayor Tsutomo Tagawa stated that even if he were given a two-hour advance warning he did not believe he could evacuate his city's 320,000 inhabitants far enough into the countryside to protect them from the effects of modern hydrogen bombs. The mayor was more hopeful about the effectiveness of a well-constructed system of shelters, however. He recalled that persons working in underground factories in the valley where the Nagasaki bomb exploded were well protected from the blast and other effects. Mayor Tagawa added, however, that he thought the best protection against nuclear weapons would be to develop an effective method of preventing carriers of the bombs from reaching urban areas.

The Japanese mayor was in New York early in September while on a one-month goodwill tour of the United States. The tour started in St. Paul, Minn., with which Nagasaki is affiliated in a "hands-across-the-sea" gesture of international friendship. Mr. Tagawa is also here to publicize an international cultural center which the Nagasaki government proposes to build. The center, when built, will consist of a library, art gallery, sports gymnasium, and an aquarium.

American and Japanese cities, he finds, have many similar problems, although in different degrees. Nagasaki's two worst problems—traffic congestion and the need for more tax revenues—are prevalent here, but Mr. Tagawa finds our municipalities far richer nevertheless. The Nagasaki mayor's next most difficult problem—coping with a chronically high level of unemployment—is not one that he finds he has in common with most American cities and towns.

### Concentration Still on Rebuilding of Cities

Japanese cities, Mayor Tagawa noted, have given little attention to the possibility of future nuclear attacks. The nation is too engrossed in rebuilding from the destruction of the last war to worry now about future destruction. Nagasaki is still rebuilding its atom-destroyed residential and industrial areas, although great progress has been made. In replanning the devastated areas, lower population densities are being achieved by requiring more space around the new residential buildings, most of which are being constructed of wood. In the reconstruction process, private land ownership was maintained throughout, the mayor said. The city only bought up land where it was needed to widen roads or develop parks to achieve the lower densities.

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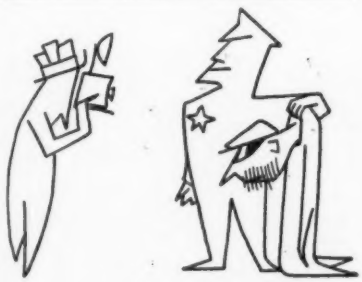
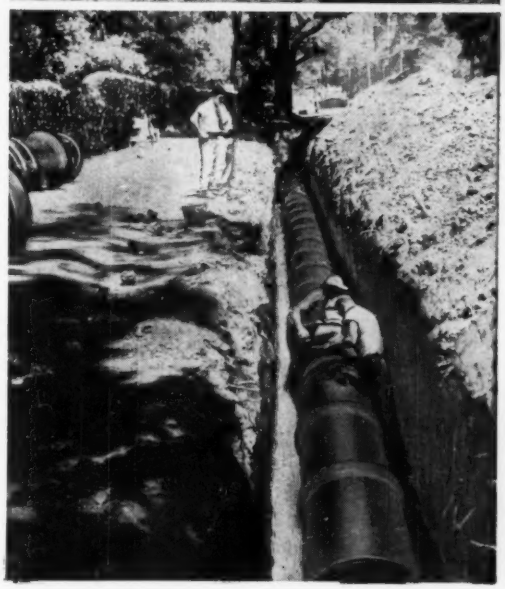


# TAX-CONSCIOUS COMMUNITIES Specify CLAY PIPE for Economy

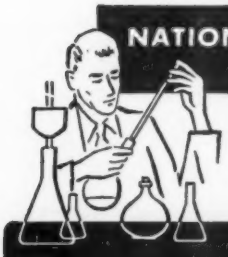


**MENLO PARK SANITARY DISTRICT** recently added more than 24,000 feet of Vitrified Clay Pipe sewers to serve the rapidly growing residential areas of San Mateo County, California. Since its founding, the District has installed approximately 150 miles of sewers.

District officials have been able to reduce tax rates consistently for the past several years, in spite of the national trend toward tax increases. Efficient operation is the key to this economy, and never-wear-out Clay Pipe plays an important part in keeping maintenance costs down. As District Superintendent Cedric Webster puts it: *"Since the sewers are of Clay Pipe, we do not believe that they will ever need to be replaced."*

**DISTRICT OFFICIALS:** Lawrence H. Cook, *Secretary of Board of Trustees and Acting District Engineer*
Cedric Webster, *Superintendent*
Frank Sasagawa, *Inspector*

**CONTRACTOR:** Pat Barkley Co.
John Coelho, *Foreman*



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**YOU WILL PICK UP BIGGER LOADS . . .** and here's why. The packing plate in a Colectomatic is located high in the hopper for better leverage. It exerts a stronger packing action through horizontal thrust, compacts more material into the body. And bigger loads mean fewer trips, better service, lower costs.

**YOU WILL PICK UP MORE LOADS . . .** because the loading cycle is fast, safe and simple. A touch of a lever starts the cycle. Twin hydraulic cylinders close the safety door and raise the hopper. These same hydraulic rams power the packer blade which sweeps the load out of the hopper and compresses it into the body. In just 23 short seconds you're ready for another load.

There is simply no substitute for performance that delivers the most refuse hauled per working day. But a Heil Colectomatic offers still more advantages: greater employee safety . . . freedom from jamming . . . maneuverability on the route . . . low upkeep and simple adjustments.

Why not get the facts by comparing a Heil Colectomatic to others the next time you're considering better refuse collection for your community. Your Heil distributor will be glad to demonstrate.

**HERE ARE STILL MORE COLECTOMATIC ADVANTAGES**

- **Quiet Operation**
  No clanking chains, minimum truck engine acceleration noise during loading.
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  Low, wide sill permits two men to load side by side.
- **Simplified Service**
  All lube points can be reached through panel door on each side of body.
- **Fast Dumping**
  Flat floor and obstruction-free tapered body provide quick, clean dumps. Load distribution on axles provides good stability while dumping.
- **Safety**
  Loading-packing mechanism is completely enclosed and a safety door protects personnel from flying debris.
- **Compact body**
  You can maneuver easily in tight alleys and other narrow, restricted areas.

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Dr. Joseph L. Campbell, Wilson County health officer (left) is on hand to help S. B. Pittman test his insecticide sprayer.

# *The Exception Proves the Rule*

## *How Wilson, N. C., built an insect-spraying machine*

By CHARLES M. WHITE, *Chief*
*Insect and Rodent Control Section*
*State Board of Health*
*North Carolina*

TODAY, the municipalities in eastern North Carolina now own well over 50 space-spray machines of various commercial makes and types. Many provide lethal insecticidal mists, while others kill with fogs. All do a good mosquito-killing job, if properly maintained.

### The Rule

The rule, rather well proven by practice, has been that a municipality is much better served with one of these commercial machines than with a rig that it makes itself. This is the story of one city that went counter to the rule and, by doing so successfully, actually proved the rule's value.

Wilson, N. C., like other cities in its area, has a mosquito problem. But unlike most other cities, it has a man on its staff with unusual energy, imagination, and mechanical skill. This man, S. P. Pittman, widely known as Pitt, has charge of the local insect- and rodent-control work.

After looking over several insect-spraying machines, he expressed a desire to build one. He obtained parts from the U. S. Surplus Property agency in Raleigh, from hardware stores, and from junk yards. In short, he put together a Rube Goldberg contraption that really worked as long as he was operating it. Very few others could make it work at all. After more changes and adjustments that increased efficiency, decreased bulk, and simplified operations, he produced the one illustrated in the accompanying picture. It can throw a wet spray when a residual deposit is desired, give off a light mist, or create a fog.

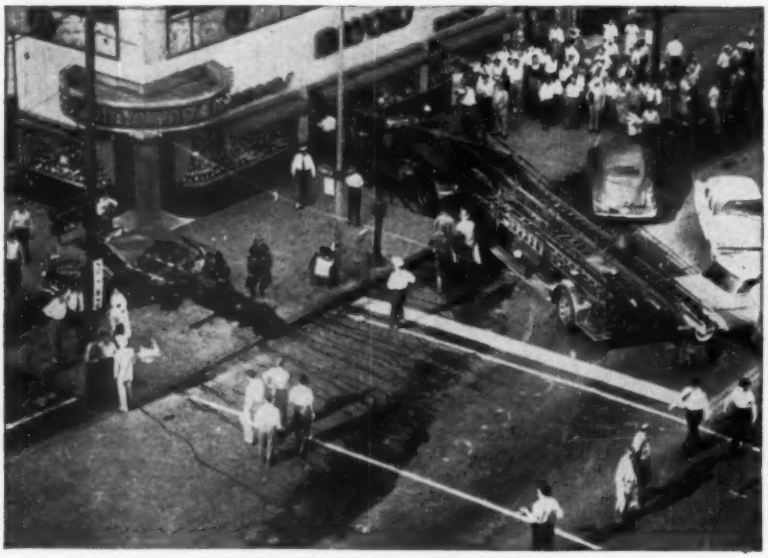
The sprayer has a small 2-cycle engine, an air compressor, a fan, a formulation tank, a fuel tank, two coiled pipes, a kerosene torch and other supplementary devices. The air compressor sends the formulation to the exhaust of the engine, and sends kerosene to the torch burner; this is a simple coil of pipe inside the exhaust coil.

When the torch is lit, the formulation is completely vaporized; when it is not lit, heat from the exhaust vaporizes the formulation to some extent, varying with the amount that goes through. The fan disperses the mist or fog into the air.

Dr. Joseph L. Campbell, Wilson County Health Officer, is very pleased with this machine and takes pride in having it demonstrated to official visitors.

We still believe that other communities should buy a tested, manufactured spray machine. A municipality, county, or company can make one only if it has a man with Pitt's qualifications. This is a rarity on anyone's payroll.

# Eliminate This!



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EL-TEC is new, but years of research and development have proved its dependability. The system and equipment have been hailed as the most important stride in emergency traffic safety in many years.

EL-TEC has been commended by the nation's leading police, fire and traffic officials as well as various State Safety Committees and Highway Commissions.

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## *The City Manager's Wife*

THE CITY MANAGER'S WIFE must learn how to be a diplomat with a kindly sense of humor. She must learn how to be friendly, and yet avoid personal-type friendships that open the door to the charge of favoritism. She must know the fundamentals of the manager-form of government so that she can explain it to friends and acquaintances who ask. She must be ready to attend social functions, and always be ready to explain the work of her husband.

These were some of the highlights that developed when the wives of the city managers took over a session at the annual meeting of the International City Managers' Association held recently in Banff, Canada. Mrs. Russell E. McClure, wife of the ICMA president, presided at the session, assisted by a panel of ICMA vice-presidents' wives. Mr. McClure is manager of Corpus Christi, Texas. Other panelists included Mrs. E. J. Allison, Ogden, Utah; Mrs. Warren Hyde, Edina, Minn.; and Mrs. J. H. Wigglesworth, Lawrence, Kans.

The wife of a manager in a city adopting the manager plan for the first time must recognize that both she and her husband are on "dress parade" at all times, the panelists explained. People frequently will "blow their tops" to her, but she must be gracious and understanding to protect her husband from criticism. In general, the panelists felt it better to let an irate citizen talk himself out.

If a manager's wife hears her husband grossly misquoted, or hears critical comments about his work, the panelists advised against openly defending him and favored telling him that these situations had arisen. It was their opinion that he could handle them more effectively than she.

A city manager's wife can accept leadership safely in civic organizations of interest to her children. This would include groups such as the Parent-Teachers' Association, the Bluebirds, Camp Fire Girls, Brownies, Cub Scouts, and Girl Scouts. In addition, she can be a member of the League of Women Voters, but should avoid taking part in controversial discussions pertaining to city government. Most felt it inadvisable to hold office.

Most felt that a wife should not feel concerned about being entertained on a scale more lavish than she can entertain in return. Most recognize and expect her to entertain on a modest level. The wife should choose moderate styles in good taste.

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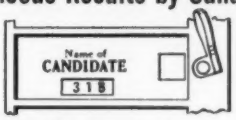


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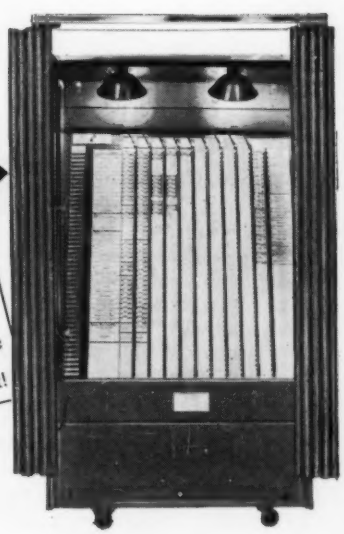

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# *Municipal Uniforms—*

By DAVID E. SINGER, *Franklin Worsted Co.*
*40 East 34 Street, New York, N. Y.*

WHEN asked recently whether he intended to bid on a rather large muncipal police contract, a uniform manufacturer replied, "No sir, not me. I'm not looking for orders, I'm looking for customers."

This expressed the attitude of many of the best uniform manufacturers in the country. In the field of uniform procurement purchasing authorities will soon have to revise their thinking, and adopt a more practical approach. The uniform industry is a small but highly specialized one. It is made up entirely of small business men, who have no difficulty finding ample orders through private industrial channels. They are reluctant to risk their capital and time in the pursuit of business which cannot provide a normal profit or, what is more important, the opportunity for building good will for future and continued business.

### Bidding for Public Contracts

Bidding for public contracts is usually a "one shot" proposition. No matter how conscientious a uniform manufacturer may be, he cannot hope for repeat orders unless he remains low bidder. However, varying labor costs in different areas of the country, reluctance of stable firms to bid against marginal suppliers, poorly drawn specifications, and untested acceptance of substandard workmanship are only a few of the factors which serve to discourage bidding.

A large city opened bids this month for police and fire equipment. Approximately $170,000 worth of business was at stake. Thirty-two invitations were sent out, accompanied by a well-made specification, yet only one firm submitted a bid.

Is an entire industry wrong which passes up such an opportunity, or does the lack of interest indicate a need for this city to give its purchasing procedures an honest, competent analysis? While there are specific reasons why this city has found its bidders' list shrinking each year, two general causes stand out. First, the purchasing office neither understands, nor has any inclination to understand the nature of this small industry, consequently imposing conditions unsatisfactory to the uniform manufacturers. Second, complete disinterest in the ethical standards of firms invited to bid is exhibited. This results in the refusal of reputable organizations to participate. After all, these are not large industrial corporations, but mainly very small business men. Most of them would hesitate to tie up a hundred thousand dollars in a single order. The larger cities should break their requirements for uniforms into several contracts: for summer needs, for winter requirements.

### A "Seller's Market"

Regardless of conditions in other fields, the uniform manufacturing industry will have a "seller's market" for the indefinite future. In order for public purchasing agencies to get competition and buy the best clothing at the best prices, bidding must be made attractive. For example, when uniforms are purchased by a private company, the purchasing agent selects *the* fabric he wants (not "or equal"). He then proceeds by interviewing manufacturers, or their representatives, who have the opportunity to demonstrate in a business-like manner their ability to satisfy the requirements of the company. The purchase is usually consummated on a price against quality basis, not on a price basis alone.

The number of mills manufacturing good uniform fabrics can be counted on the fingers of one hand. Their products are available to anyone. Why don't the cities first take bids and place contract for the fabric they want. Then let every bidder on the uniform submit bids which use the fabric specified by the department.

### The "Or Equal" Clause

A bid made on an "or equal" basis is almost always made on a lower priced fabric. The great paradox in this lies in the fact that the difference in price between the cheapest fabric and the best uniform fabric is very small, yet the difference means many months of better wear and appearance to the purchaser.

A large State Highway Patrol has many hundreds of shirts and trousers in its stock room in varying shades and qualities, because it is compelled by its purchasing department to accept inferior uniforms on an "or equal" specification. Many good uniform manufacturers will not bid under such conditions. There is no way of knowing what materials their competitors will offer, except that they will be materials that are a little cheaper. There is nothing that cannot be made a little poorer and a little cheaper. Why do purchasing authorities encourage this practice?

Uniform cloth is not available for immediate delivery in large quantities. It is made against orders, and requires about 10 weeks to produce. Even where the fabric is definitely specified, no mill can proceed in preparing it for an organization buying on an "or equal" basis until a firm order is placed. Adding this time to that required for manufacturing the uniforms, four to five months must elapse before a contract can be executed. Fabrics, when properly specified, can be produced well in advance of the opening of the uniform bids, and be ready for delivery to the successful firm. But this is not possible in the presence of the "or equal" clause. Instead of encouraging fair and open competition, as it is intended to do, the "or equal" clause in the purchase of uniforms is a back door to substitution and delay.

## *New Sweeper Brooms Five Times Faster*

DETROIT'S Department of Public Works now can refill a street-sweeper broom in 15 minutes, or five times faster than it was able to do with older broom-filling equipment. The Department now uses a Coramatic broom filler made by the Municipal Research and Development Corp. of Seattle, Wash. This new core-filling machine applies 100 pounds of fiber to the core.

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| NO. PICKUPS FIRST LOAD | 215 | 382 | 250 | 485 | 252 |
| TOTAL WEIGHT | 7530 | 9420 | 8110 | 10,670 | 7190 |
| WEIGHT PER CUBIC YD. CAPACITY | 470.6 | 471 | 405.5 | 533.5 | 449.4 |

In city after city, competitive tests prove HydePak makes more pickups faster, while original cost is lowest. And with HIGH COMPACTION, it can carry the most weight per cubic yard of capacity, making fewer trips to the dump yard.

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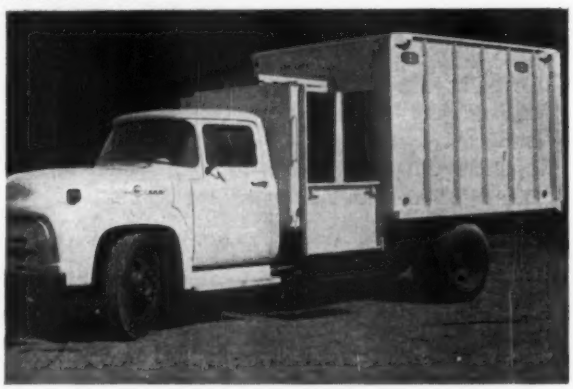
It will pay you to check on the HydePak . . . available in 13 yd., 16 yd., 20 yd., and 24 yd. capacities. In low price. . . . quality . . . service . . . and capacity, the HydePak has never been surpassed.



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## *in Portsmouth, Ohio*

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By JAMES D. WILLIAMS, *City Auditor*
*Portsmouth, Ohio*

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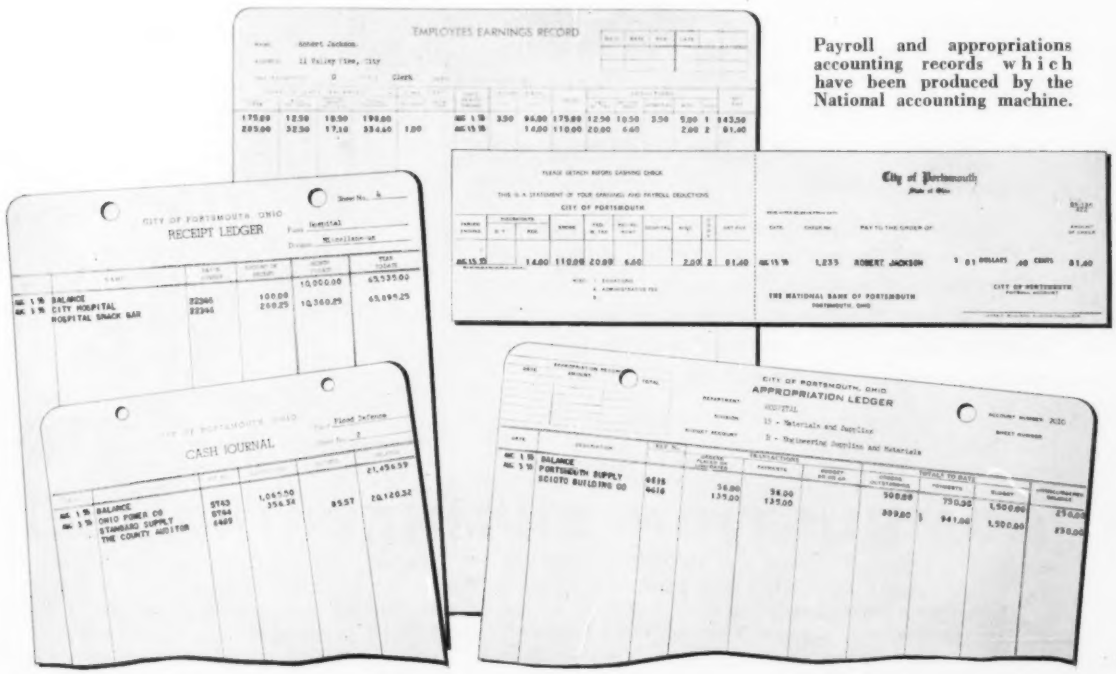
The job is now performed in two days. Notice the payroll forms in the illustration. Check, employee's pay statement, earnings record and payroll cash disbursements journal are printed simultaneously, and all the figuring is automatic. With up-to-date balances for gross earnings, and withholding tax and retirement fund automatically figured on each earnings record, writing of W-2 forms has become an easy job.

Orders outstanding, payments to date, and unencumbered balance are automatic calculations, and are created as a by-product of posting.

### For Most Small Cities

Like many small and medium-sized cities which bookkeep by hand, we too felt we couldn't "afford" to mechanize this work. When we found we could do it all with one machine, mechanization is within the reach of most small cities.

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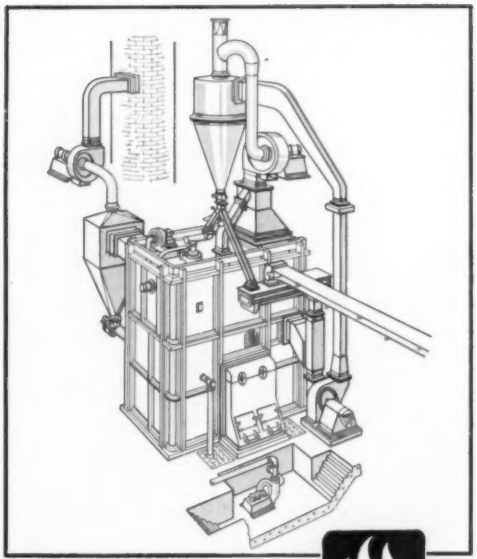

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# *Five Challenges in Todays New Urban World*

By LUTHER GULICK*
*President, Institute of Public Administration*
*New York City*

*Here's a look at the impending crisis to cities and towns which America's very rapid population growth is bringing*

THE staggering scientific, economic, and political developments of the past few years have brought more and more municipal officials to the realization that our cities are being plunged into a new world without adequate warning or preparation.

Atomic power, nuclear weapons, and the weaknesses of international agencies in the face of international tensions have helped define the broadened horizons of the new world but, at the same time, have introduced threats to its very existence. However vast these forces are, there is an even more revolutionary trend defining this new and challenging urban world. This is the revolution in American population growth and the shifting pattern of human settlement that is bringing an increasing percentage of the nation's population into city areas. Together these forces are creating an urban crisis which, in the future, will be so vast as to dwarf all previous conceptions of city problems.

Within 50 years, the population of the United States is likely to reach 300,000,000 according to recent estimates by the National Industrial Conference Board and various other leading population authorities. Of this added 132,000,000 people as many as 80% to 90% will work and make their homes in and around the metropolitan areas, if recent patterns of settlement mean anything. This development in the short span of 50 years will have a staggering impact on municipal and other local governments, and on the states as well. The difficult and "crucial" problems today are just minor ripples compared to the tidal waves which are already sweeping toward us.

In this new urban world, what outlines, what "truths" can be discerned today? Here are five points that no one outside a home for the feeble-minded can miss:

1. ***Right before our eyes there is being born a completely new pattern of human settlement.*** We call it the "metropolitan community," though this is probably a bad name. The structure of loyalty, the pattern of economic and individual interrelationships, the mechanisms of communication and circulation are radically new. What we see is more like a nation, a city-state, than anything we have known in the past. While it is useful perhaps to invent a suitable name for the new American metropolitan complex, it is much more important to recognize that something totally new is developing and that this development requires a whole series of new fundamental ideas.

2. ***Every large American city is now physically obsolete.*** The street pattern in the business, shopping, and manufacturing centers is already a tremendous handicap to effective work and living. In its main outlines and capacity it is tragically short of the minimum needs of the next generation.

The mass transportation system is in chaos, and is headed for collapse where it is not already bankrupt. The effort to make do with private cars is choking the city to death, and every "traffic improvement" is soon neutralized with supersaturation. Freight movement and trucking are caught in the same vicious circle of increasing delays and rising costs.

Slums are increasing in spite of subsidized housing programs and invigorated enforcement. Recreational facilities are either too congested or too hard to reach because of traffic difficulties and have no relation to future requirements.

The engineering services are already overburdened. Water supply is in danger except in a few farsighted or favored cities; sewage treatment is lagging; and sanitation and air pollution control are ineffective in many places. Schools are short everywhere, especially in the exploding suburbs, hospitals and homes are inadequate, and general administration buildings, prisons, and street pavements leave much to be desired.

3. ***The governmental machinery and powers of most great cities and of all metropolitan areas are also obsolete.***

Though all the problems I have mentioned — traffic, transportation, slums, water, sewers, sanitation, and air pollution control, recreation, schools, hospitals and the street pattern—have its metropolitan aspects, there is no governmental authority which can think, make plans, develop programs, reach decisions, and take action for the metropolitan community. No metropolitan community has any official plan for its general development or for solving the related problems of regional obsolescence. This is bad enough; but the truly disastrous fact is that there is now no way of developing a plan of cooperative action. To do this, we need new community machinery, new community thinking, new community leaders, and new powers of local government. The whole mechanism

* Mr. Gulick was the first City Administrator of the City of New York.

of community life and executive direction, programming and planning is behind the times now, and is totally unprepared to face the future.

4. ***The fourth fact, challenging every move, is finance.*** Our local governments are struggling to get along with revenue, tax, and debt systems which belong largely to the nineteenth century, and the nineteenth century patterns of wealth and incomes. There have been some improvements in the past 50 years, but these have been largely patchwork. There is still no consistent new philosophy.

With debt-limit exemptions and special "authorities" we are departing further and further from pay-as-you-go, without any economic analysis to guide us in setting new limits to the capacity to pay. We tide the localities over with emergency tax powers and state and federal aid, without thinking through the question of the legitimate base of tax support, the appropriate uses of fees, prices, and benefit levies, and without considering how localities can be cushioned against inflation or forced to take local responsibility for local decisions. And we are probably much too timid when it comes to projecting the capacity of the future to pay for what it needs.

Have you thought what it means in America to see the national productivity and income rise along with the population? Might it not be better to make our cities of 2000 A.D. truly adequate and beautiful than prematurely to shorten the work week further? Make no mistake, this decision could be made by the American people largely in terms of taxation and finance.

5. ***The fifth truth we face is purely political.*** And when I use the word "politics" I use it to cover the action of the community, formal and informal, in selecting officials, holding them accountable, and guiding the course of public policy through debate, petition, research, recommended decision, and maintenance of community governmental standards.

I hold that such political action is necessary in a democracy; that "politics" is not a dirty business, though some have made some aspects so; that there will always be, and should be, professional politicians in big communities, just as there are professional shopkeepers, engineers, teachers, carpenters, real estate operators and newspaper editors; and that those who are concerned with influencing major community and governmental decisions and actions are "in politics" whether or not they like that word.

The political problem we face in the great cities today is not "machines," "ignorant new immigrant voters," "franchises, spoils and graft." The political problem starts with a superficial notion that "politics" is bad and that the educated and respectable citizens should have nothing to do with politics except to register, vote, pay taxes, work in a few civic groups, like the PTA, and beef about bad government.

With this background, is it any wonder that political parties become machines, seeking to win elections by sleight of hand rather than community service, that the local press too often takes little intelligent or "educative" interest in local governmental affairs, that men and women of "light and leading" are conspicuously reluctant to help with local politics; and that the man in the street takes a jaundiced view of politics and government?

This American attitude toward


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*Excerpt from article in MODERN SANITATION MAGAZINE*

— more users can be served in quick succession so that one such fixture is the equal of eight to ten individual (so-called) fixtures.

**Economical Choice**

AMONG its other advantages, the washfountain requires less floor space, leaves walls clear, and has only two water lines and one drain and vent in contrast to the sixteen lines and faucets and the drains and stoppers on eight lavatories. Initial installation of rough plumbing is simpler and less costly; the routine cleaning of the fixture is easily and quickly done. The water temperature can be thermostatically controlled if there are serious fluctuations in hot water temperature or pressure. The saving of about 25 per cent in floor space and the substantial savings in daily maintenance through the life of the equipment therefore make the washfountain an economical choice.

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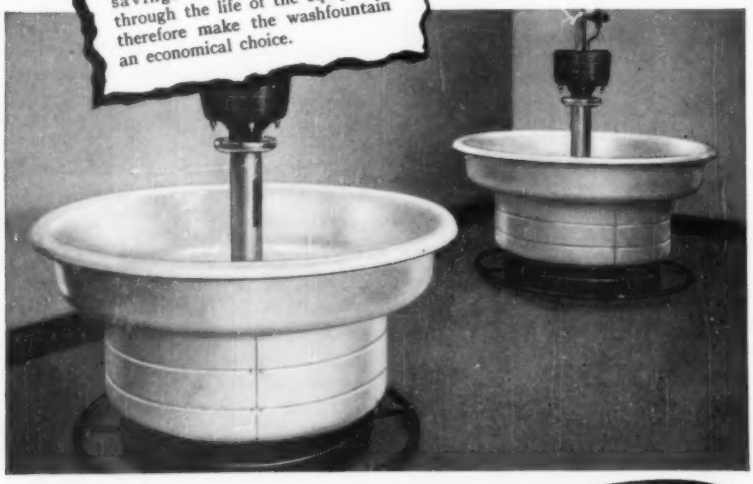
Space is saved, installation time and costs are reduced because only three piping connections are required—two supply lines, and one drain and vent. There are no faucets to touch, and the self-flushing bowls guard against collection of used water.

New Catalog 5601 shows all models complete with specifications. Copy will be mailed gratis. BRADLEY WASHFOUNTAIN CO., 2333 W. Michigan Street, Milwaukee 1, Wisconsin.



*Catalog 5601 containing full data and specifications, sent on request.*

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Armco corrugated metal construction features high strength with light weight. Bolted connector bands assure strong, tight joints.

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politics, especially local politics, is not only obsolete, it is dangerous for democracy. This is one of the major obstacles we face as we look into the future.

How is any town, or any county, or any state going to develop methods of renewing and rebuilding the obsolete American urban center with its raging and chaotic suburban complex? Recognizing that everything cannot be done at once, what things come first? How do we relate public governmental action with private investment which, after all, must do the major job? Who should be induced to do something sensible as to the "civil defense" fiasco? How are we going to finance the various elements of the required program as a whole, not just piece by piece? How shall we tie together in a co-operative team the various independent elements of the metropolitan community without destroying the legitimate home rule elements of neighborhood life? How are we going to draw the "good citizens" of the community into more responsible participation in politics?

### Planning

The emerging crisis points again and more clearly so to the urgent need of broad and wholescale planning—not just physical planning but planning that takes into view all aspects of the urban pattern, the governmental, economic, social and political, and weaves these elements together with a new approach or philosophy geared to the truths of the new world our cities are living in. All levels of government will be concerned with working out a broad attack on the problems through a new vision of the form and function of municipalities in the new urban world.

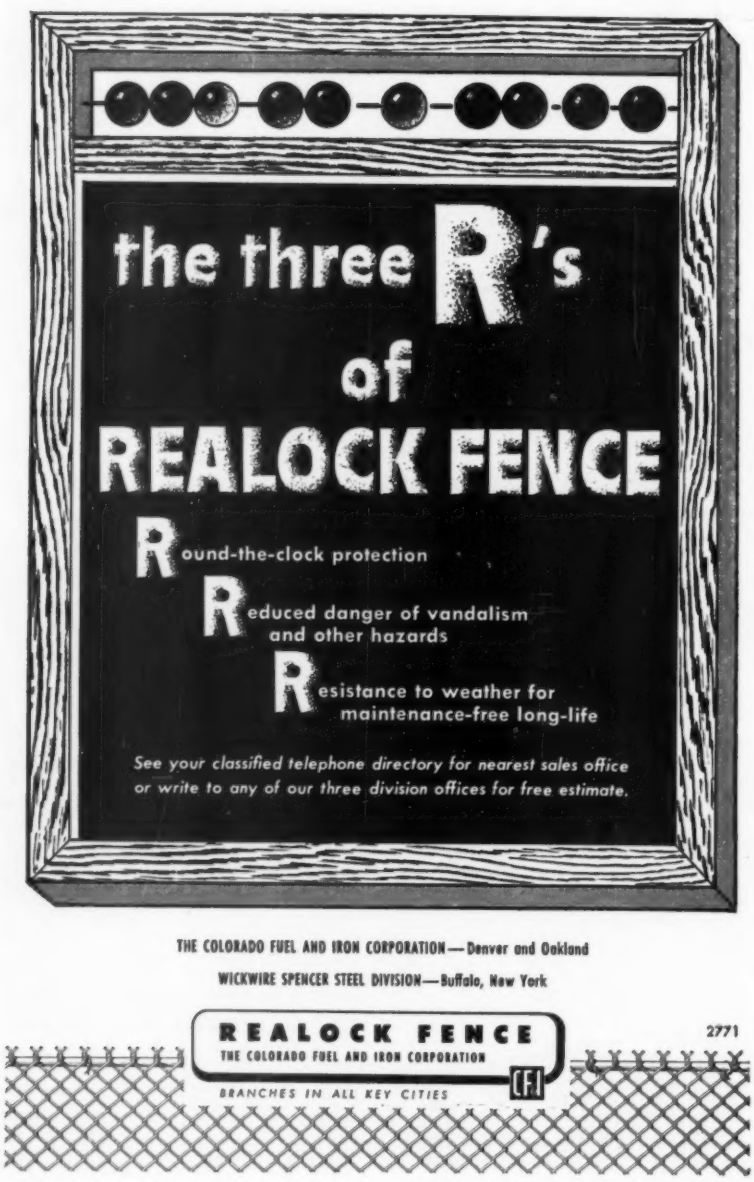
But time is short, and American cities and towns cannot wait until the large federal and state study programs that are clearly called for by the magnitude of the emerging crisis get under way. Undoubtedly, the need for such broad analyses will be seen widely in a few years, but localities should not wait to study their local situations in the light of the new "truths."

Three things need to be done in each community right away. First, the mayor or city manager should pull together within the government all of the necessary elements to review as quickly as possible all current problems for the future including particularly the master physical plan, its future capital improvement program, and all other administrative programs and plans in the light of the flood of growth and change that is coming. Second, the business and community leaders need to make a similar effort to pull together their best thinking not only for developments within the city but throughout the whole metropolitan region; and third, the business and community leaders and the political leaders need to establish a basis of mutual understanding for joint action to meet the challenges of this new urbanism.

### Ask These Questions

Are your sights high enough? Are you calculating on a rapid enough growth for your community? And are you preparing a close cooperation with your neighboring municipalities in order to mutually help each other in the growing crisis of growth?

On the citizen level, are your residents growing aware of the many decisions that they will be called upon to make more and more rapidly? Is a new approach to the function and form of your community being developed with them? These are but a few of the questions all civic leaders both in and out of official government must ask themselves about the new urban world in which our cities now find themselves.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Progressive Capetown, South Africa, in addition to 925 miles of sewers and storm drains to maintain, has unique, special problems in its picturesque Table Mountain area.

Five huge 2800 foot long culverts are required to dispose of tremendous peak flows from the mountain slopes, and also accommodate a perennial fresh water stream flowing into the Cape of Good Hope. Over 30,000 cubic feet of silt and debris must be removed from these culverts each year.

Meeting its needs *modernly*, the City Engineering Department has wisely equipped itself with a fleet of eight "Flexible Bucket Machines". The machine shown "on the job" is the first unit purchased in 1948—*still going strong.*

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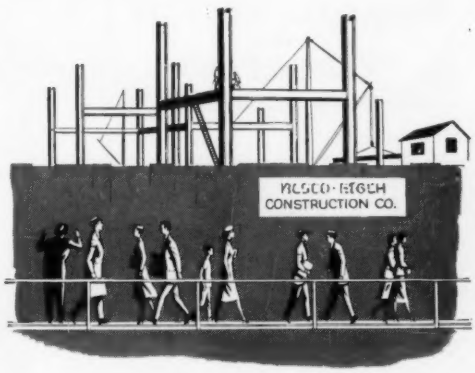

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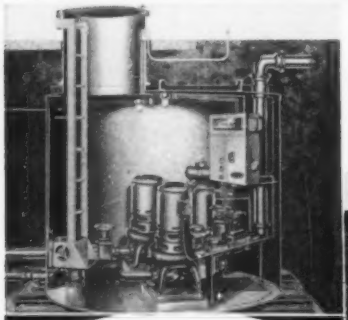
## BUILDS FIVE (5) SEWAGE LIFT STATIONS FOR INDIANOLA, MISSISSIPPI

When bids were received for a sewer system at Indianola, Mississippi the cost of five (5) concrete lift stations exceeded the available funds.

To reduce the cost of these stations the consulting engineers, Ewin Engineering Corporation of Mobile, Alabama, prepared new plans and specifications for factory-built lift stations as manufactured by Smith & Loveless, Inc.



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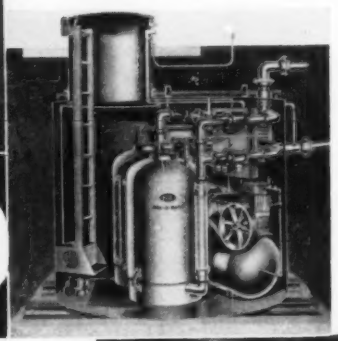
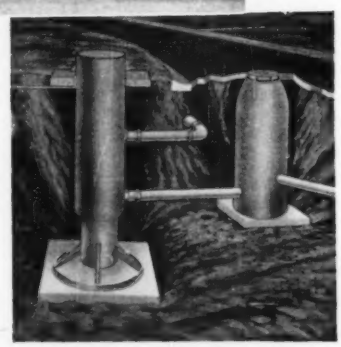
The Indianola lift stations recently installed are of both pump and ejector types as follows:

ONE — 8′ diameter duplex pump station with 600 G.P.M. pumps.



TWO — 8′ diameter "Way-O-Matic" duplex pneumatic ejector stations with 100 G.P.M. ejectors.

ONE — 9′-6″ diameter "Way-O-Matic" duplex pneumatic ejector station with 200 G.P.M. ejectors.



ONE — 4′ diameter "Mon-O-Ject" single pneumatic ejector station with 40 G.P.M. ejector and stand-by motor, compressor and controls.

For job recommendations, complete specifications and drawings—all part of the latest edition of the 100 page Smith & Loveless lift station Data Manual . . .

**WRITE DEPARTMENT 10**

Hundreds of cities are reducing costs with Smith & Loveless "proven quality" lift stations.

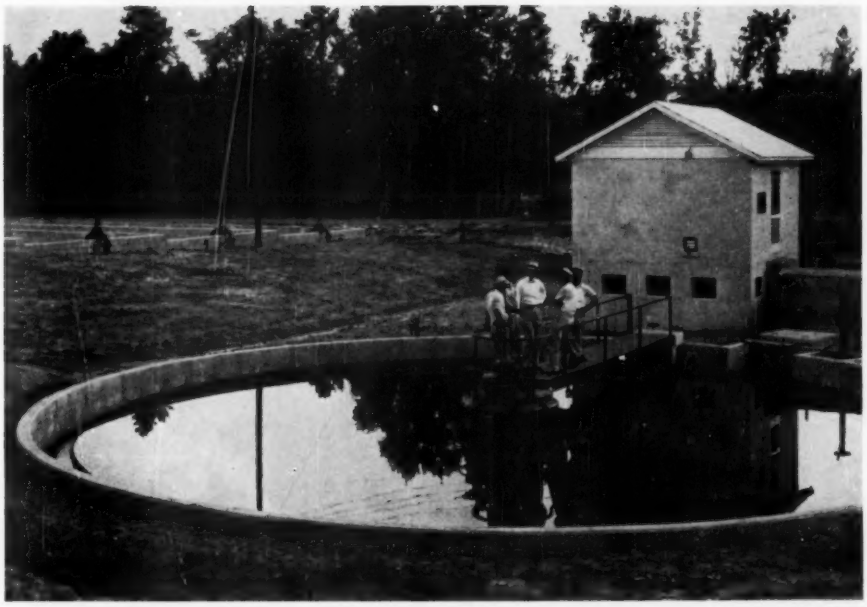
**S&L Smith & Loveless, Inc.**

**P.O. BOX 8172 KANSAS CITY, MISSOURI**

PLANT: MERRIAM, KANSAS

REPRESENTATIVES IN PRINCIPAL CITIES

***A city of* 10,000 *invests $4,000,000 in its future growth***



City officials inspect the sewage-treatment plant. Sludge-drying beds are in the background at left.

# *Sewage and Water Improvements Led the Way*

By JAMES DOUGLAS BROWN
*Mayor*
*Ozark, Ala.*

IF a city believes in its future, her people are not afraid to invest in that future. The confidence our people have in Ozark is reflected in about $4,000,000 worth of improvements undertaken in the past three years and rounded out during recent months. This program included construction of a new city hall, a high school, a hospital, and a library. In the public works and utility line, we paved about 7 miles of streets, added greatly to our water supply, and constructed a completely new sewage collection and disposal system.

Ozark's population jumped from 3,600 to about 10,000 persons in 12 short years. We found ourselves with a water supply so low that rationing was being considered and with a sewer system that seriously threatened the health of our people. Our streets and the buildings in which the various departments of city government functioned were outmoded.

### Single Program

Although this article deals chiefly with the new sewage treatment plant, construction of the plant and sewer system was part of an overall program covering all city needs.

The program began in 1951, as a result of our first contact with George L. Moulton, then a vice president of Ewin Engineering Corporation of Mobile, Ala. At first it was more of a dream than anything concrete, but circumstances found a real need for a sewage disposal plant. Consequently, the city retained the Ewin Engineering Corporation, not only to study the matter of sewage treatment, but to survey the needs of the city regarding water supply and street construction as well.

### Raising Funds

We first applied for a loan from the federal government through the Housing and Home Finance Agency for money to cover the cost of preparing plans and specifications for the plant. This loan was granted and our plans got under way.

Our proximity to Fort Rucker made us eligible for a federal grant for sewer and water extension and expansion, so we made application for such a grant. This resulted in an outright government grant of $350,000. We acquired another $500,000 by issuing 30-year bonds backed by the revenues of the water system. Of this money, about $450,000 was spent in constructing the sewage-treatment plant.

### Plant Design

Our engineers designed the plant for a capacity of 1.0 mgd (million gallons daily). Sewage entering the plant first passes through a bar screen and Worthington Model #15-5 comminutor. Before entering the primary clarifier, the sewage is metered by an open channel, float-operated Sparling flow meter.

The primary clarifier is a 44-foot-diameter tank containing Dorr-Oliver equipment for the removal of settled solids and also floating scum. Effluent from the primary clarifier then flows to two wet wells before being pumped to the trickling filter.

Four Chicago Pump Company nonclog-type vertical sewage pumps transfer the sewage from the wet wells, through an 8-inch header, to the trickling filter. A four-armed

Primary and secondary clarification plus biofiltration has removed an unsightly and dangerous condition from Ozark.

Tanyard Creek was nothing more than a polluted swamp before Ozark constructed its new sewage treatment plant.

Dorrco distributor, of the rotary, self-propelled type, applies the sewage evenly over the 132-foot-diameter standard-rate filter. Sewage from the filter then flows to the final clarifier. This unit is the same size and contains equipment similar to that used in the primary clarifier. The plant effluent is then discharged into a small stream that is located nearby.

The plant also contains and uses Wallace & Tiernan equipment for both pre- and post-chlorination operations.

### Separate Sludge Digestion

Two Yeoman Brothers piston-type pumps transfer the sludge from the clarifiers to the digester. This unit is a circular tank 48 feet in diameter and equipped with a Pacific Flush Tank Company floating cover. The gas is collected and burned in a waste-gas burner.

Sludge-drying facilities include five beds each 25 feet by 100 feet in size. The dried sludge is removed from the beds and utilized as fertilizer.

The sewage-collection system includes about 33,000 feet of corrugated metal sewers and 15,680 feet of 6-inch cast-iron force mains. Also included are 143 manholes, 7 air-relief valves, and 387 feet of piers.

Ozark occupies a series of ridges requiring numerous lift stations and many feet of force main. The complete system will require 10 pumping stations. The four now in operation are equipped with Sloane ejectors furnished by Yeoman Brothers, Inc. A fifth station is under construction.

Today 95% of the city is served by the sanitary sewers and we are constantly requiring property owners to connect into the system. The $50 tapping fee covers only about 25% of the sewer installation costs, the balance being paid by sewer charges. We found it necessary to add a 40% sewer charge to the water bill to help pay for the new sewerage system. For the past three years this has brought in sufficient revenue to pay interest and retire bonds as they became due.

### Water Improvements

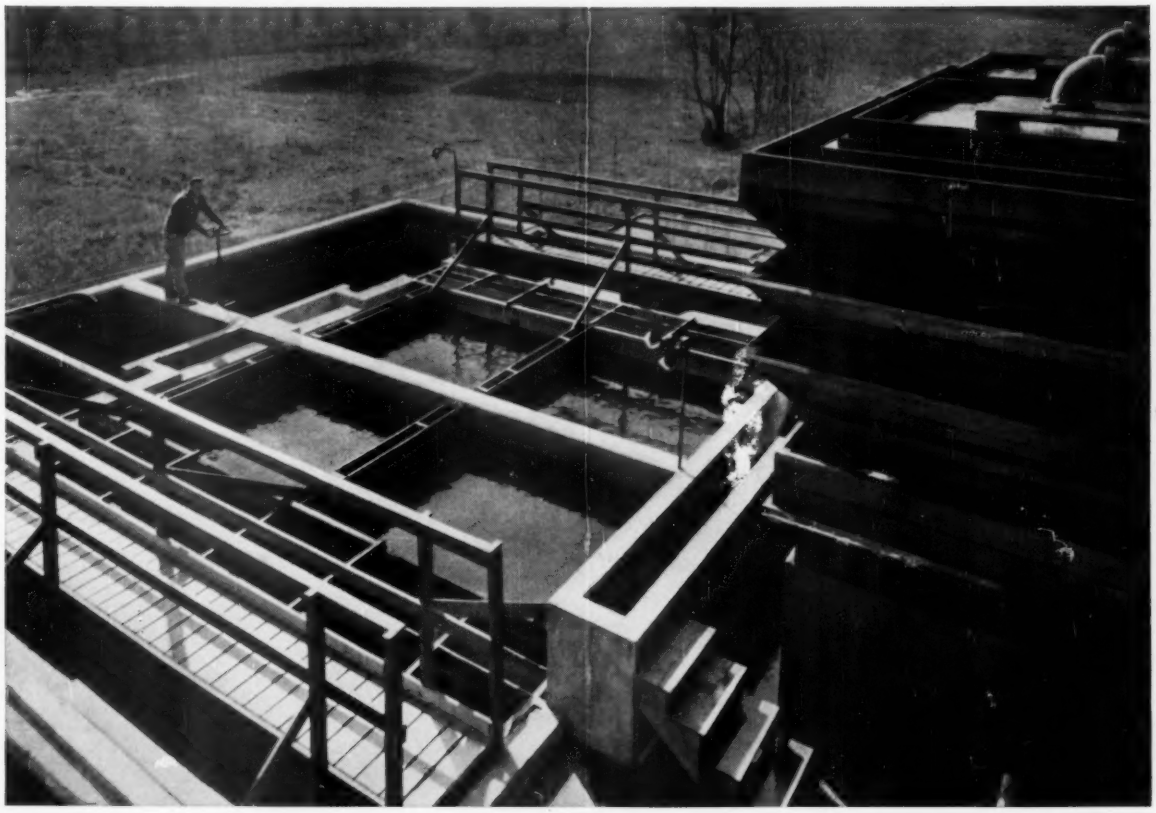
Our water-system improvements are certainly worthy of a brief note. The additions included an 822-foot well drilled by Layne Central of Montgomery, Ala., about 10 miles of water main, and a double ellipsoidal, all-welded water tank. The 250,000-gallon elevated structure was erected by the Chicago Bridge & Iron Company. Total cost of the water improvements came to approximately $300,000. Our own forces are constantly adding to the sewer and water systems. We now have 1,975 metered customers as compared to 1,256 at the completion of the project in 1954.

### Water System Undergoes Test

The water system recently underwent a severe test. While fighting a $250,000 fire, we had 10 pumpers working within a three-block area, and after four hours of pumping our storage was still at its 500,000 gallon capacity.

Our citizens are justifiably proud of their new sewerage works, water system, newly paved streets, and the new city hall, also designed by Ewin. It contains space for city offices, police and fire departments, and the jail. Completely air-conditioned, it has a floor area of 7,500 square feet and was constructed for about $80,000.

L. B. Seffield is manager of the Ozark Utilities Board. Other members include James Y. Carroll, chairman; Murray Wells, and C. A. Lisenby.



**Raw well water** with 30 parts per million of iron enters the double coke-tray Permutit *Aerator* (right) which oxidizes the iron and reduces $CO_2$. Next step is the Permutit *Precipitator* (left) where lime is added to raise pH and precipitate the iron . . . clay to thicken the precipitates. The resulting floc forms a suspended sludge blanket that speeds the chemical reaction . . . makes it more complete. Final treatment is by 5 Permutit Pressure Filters which remove remaining traces of precipitated iron and turbidity to deliver clear, iron-free effluent.

# How *Fairless Hills* reduces iron from 30 to 0.14 ppm!

Fairless Hills, Pa., was built from the ground up to a community of 6,500 in less than 4 years . . . yet, because of good planning, there has never been a water supply problem. Before construction began, the search for water was underway.

The first test wells were disappointing . . . couldn't deliver enough. The nearest river water supply was too dirty and within the tidal basin. And when an adequate well water supply was discovered, it was acid and contained not just the usual few tenths ppm of iron but well over 30 ppm . . . 100 times the allowable standard!

Since even a few ppm of iron are considered difficult to handle, 30 parts presents a real problem. Because of the efficiency of its unique sludge-blanket design, a Permutit *Precipitator* was provided under specifications prepared by Consulting Engineer Howard A. LeVan, Jr. of Harrisburg, Pa. The unit was guaranteed to reduce iron to not more than 0.3 ppm.

*"Now, the iron content is 0.14 ppm and the pH is 9.0. This equipment is doing a good job," reports H. D. Markle, Chief Engineer for the builders.*

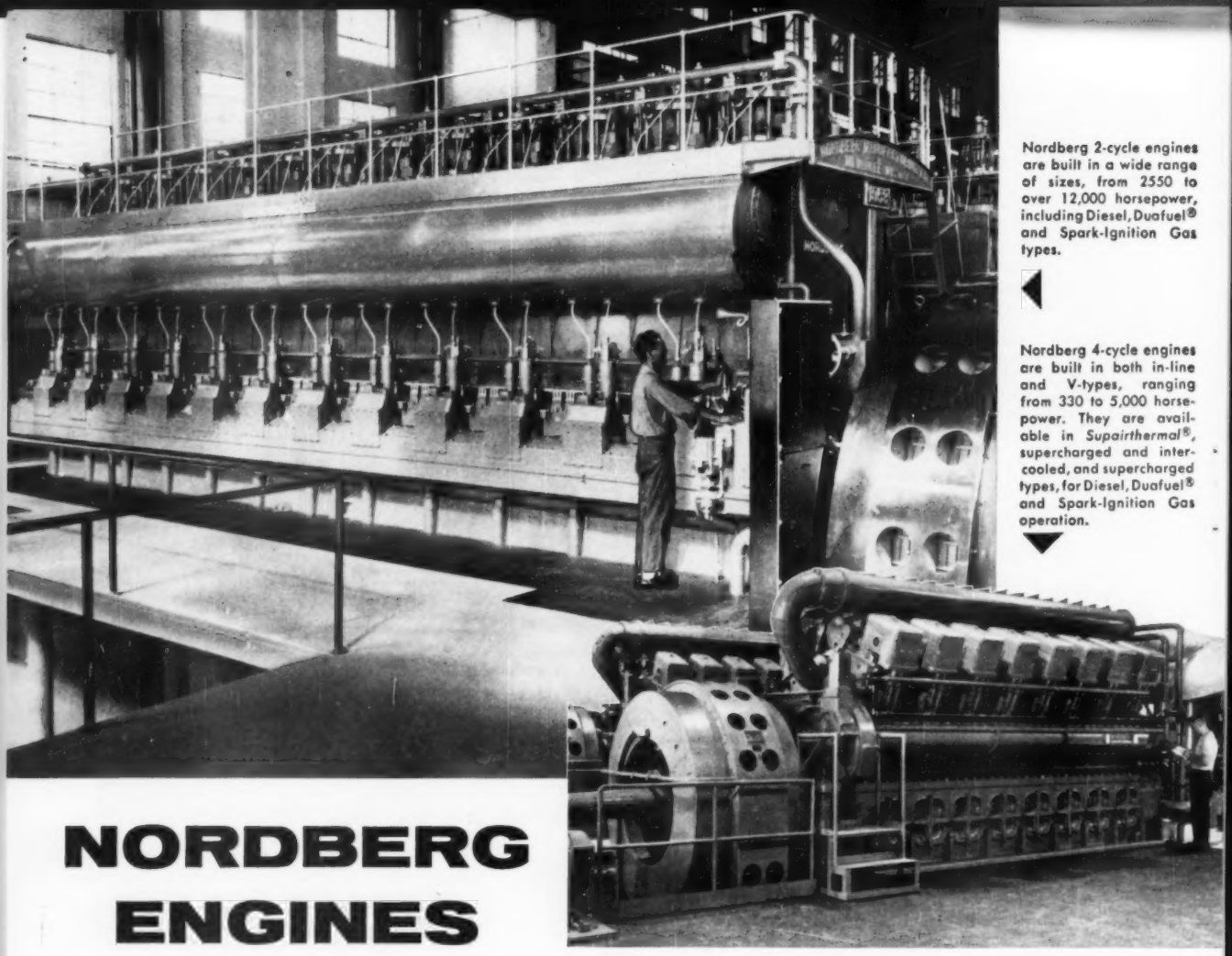
*"In 29 years around the country, I've seen numerous Permutit installations doing a good job," adds Township Sup't. of Sewage and Water Supply, W. W. Willis.*

It's easy to see why you should bring your water problem to Permutit. Address: The Permutit Company, Dept. AC-12, 330 West 42nd St., New York 36, N. Y.

**Water Conditioning · Ion Exchange**

**PERMUTIT**

**EQUIPMENT · RESINS · EXPERIENCE**



Nordberg 2-cycle engines are built in a wide range of sizes, from 2550 to over 12,000 horsepower, including Diesel, Duafuel® and Spark-Ignition Gas types.

Nordberg 4-cycle engines are built in both in-line and V-types, ranging from 330 to 5,000 horsepower. They are available in *Supairthermal®*, supercharged and intercooled, and supercharged types, for Diesel, Duafuel® and Spark-Ignition Gas operation.

# NORDBERG ENGINES

## Set a *New Standard of Performance* for Power Generation

NORDBERG has an enviable record of more than forty years of specialized experience in the field of heavy duty internal combustion engine design and manufacturing. The purchase of Busch-Sulzer Bros. Diesel Engine Company in 1946 brought together two of America's outstanding Diesel builders . . . Nordberg, leader in the large engine field, and Busch-Sulzer, builder of the first successful Diesel to go into regular commercial service in 1898.

Always alert to the ever-increasing demand for better, more efficient and dependable prime movers, Nordberg has continually designed and built the finest engines that modern technical knowledge, facilities and experience could produce.

*This unsurpassed combination has proved, through thousands of installations throughout the world, that Nordberg Engines have set, and are continuing to set, new standards of performance for efficient, reliable, low cost power generation . . . for both base load and standby power in public and private utilities, and for industry at large.*

Backed by this broad experience and proved performance, Nordberg Engines are, by all standards, your best investment in modern prime movers for economical, long term power generation.

Write for further information, outlining your power requirements.

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DIESEL • DUAFUEL® AND SPARK-IGNITION GAS ENGINES

***. . . builders of America's Largest Line of Heavy Duty Engines — 10 to over 12,000 horsepower***

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P756

More sweepers, some with detachable hoppers, put street cleaning on a workable basis in the face of increasing traffic loads.

***To keep heavily traveled streets clean, a city must provide . . .***

# *Mechanization Plus Administration*

By J. M. COTTER
*Superintendent of Sanitation*
*St. Paul, Minn.*

ST. PAUL, like most American cities, has experienced a great increase in auto and truck traffic. Concurrent with this have arisen rather persistent problems of keeping these streets clean.

When Frank D. Marzitelli became commissioner of public works in 1952, he recognized these difficulties and, furthermore, saw the need for more mechanization as the most effective solution. Most important, he was able to convince the mayor, comptroller, and the council that his solution was sound enough to deserve an appropriate place on the budget.

At the time, the department owned one old Wayne and two Elgin power sweepers, Model 81. Since then, the Wayne has been replaced by a 1954 model, and six new Elgin sweepers, with detachable hoppers and Dempster hoists, have been added to the fleet, making a total of nine power sweepers. Three of the new sweepers have dual controls and dual gutter brooms. The two Model D Elgins and the Wayne are used in conjunction with a front-end loader and trucks in the outlying districts where the traffic is not as heavy. We are able to use the six new sweepers in the Loop district or on arterial streets where traffic is heaviest since they do not interfere with traffic as did the old type sweeper. Furthermore, the streets are now swept with a minimum of dust interference, effected by reloading with a front-end loader. Thus objectionable piles of debris, which normally have to be placed in the gutter for transfer to a disposal plant, are eliminated.

The next step was to prepare an efficient schedule of street-sweeping

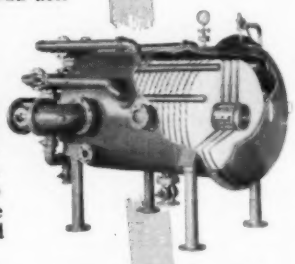
This tiresome problem has been eliminated by the use of nighttime parking bans.

# Sparkling clear Bacteria Free Swimming Pool Water

## With minimum chlorination and no alum, soda ash treatment!

The Sparkler Model SCJ diatomite water filter reduces bacteria 80% to 100% and removes all visible sediment and organic matter, producing a clear sparkling swimming pool water of zero turbidity. Thus a minimum of chlorination is required for safe sterile water without irritating alum and soda ash treatment. Bathers will enjoy swimming in safe, clear, natural water without the objectionable taste and burning eyes and skin caused by harsh chemical treatments.

The Model SCJ is a slurry feed diatomite filter with a built-in jet spray for flushing. The synthetic orlon cloth filter media precoats quickly and washes clean rapidly. Less than 0.2% of water is required to backwash and clean this filter. A complete fresh pre-coat of diatomite can be applied and the filter put back in operation in 15 minutes. Anyone can learn the simple procedure to clean and pre-coat a Sparkler filter in a few minutes.



Model SCJ for large pools available in capacities up to 5 million gals. per day

The original cost of the Sparkler SCJ filter is about ⅔ that of a sand filter of equal capacity and requires less than ½ the floor space. Complete recirculating systems, including a debris catcher and chlorinator can be engineered into the installation when required.

**PORTABLE FILTER** Model C is a low cost diatomite filter especially designed for private pools, very simple to operate. Made in two sizes, 7 sq. ft. and 14 sq. ft. Bulletin on request.

*Write—without obligation—for plans and prices on your requirements. Our filtration engineers will gladly give personal service to your filtering problems.*

*Filtration engineering and manufacturing exclusively for over 30 years.*

**SPARKLER**

**MANUFACTURING CO., Mundelein, Illinois**

Sparkler International Ltd. with plants in Canada, Holland, Italy and Australia—Service representatives in principal cities throughout the world.

operations. To do this, we divided the city into new routes consisting of Loop, or business-district, streets; Loop fringe streets; and residential paved streets. The city has about 350 miles of paved streets and alleys and about 500 miles of oiled dirt streets.

Our schedule provided that the Loop streets be cleaned each night; the Loop fringe streets, every other night; and the residential paved streets about once a week or every ten days, depending on the traffic they carry. In addition, the sweepers cover the oiled streets each spring, prior to their receiving their annual treatment of new oil.

### Parking Ordinance

Last spring, at the suggestion of Commissioner Marzitelli, the city council enacted an ordinance forbidding the parking of cars within the Loop area between the hours of 1:30 a.m. and 7:00 a.m. on one side of the street on alternate nights. This traffic ordinance was of great assistance in helping the Bureau of Sanitation expedite cleaning operations. The Traffic Committee also has enacted an ordinance forbidding parking on one side of certain streets on alternate nights from November to April for the purpose of snow removal. Two men with a truck post all streets, not specifically marked, with metal standards mounted on a heavy base. This crew picks up the posting signs on the following day, and then sets out signs for the next district.

These rather simple regulations, plus adequate amounts of mechanical equipment, have enabled the city to cope with street-cleaning problems in the face of traffic loads that many of us never could have possibly visualized as short a time ago as 15 years.

## *Town Abolishes Property Tax*

EMERYVILLE, Calif., reports that as of this year, the town has abolished its property tax. Instead, it has entered into a sales tax agreement with Alameda County, effective July 1, 1956, under which the town will receive "some sales tax amounts." A municipality of 2,889 people, Emeryville does not own municipal utilities. Previously it maintained a tax of 88 cents per $100 assessed valuation. Official figures established the value of property, state and locally assessed, at $34,798,385 for fiscal 1954-1955.

# Here's the easy way to get your water bills in their hands on time—every time!

Burroughs Sensimatic Accounting Machine. Its speed with water bills helps you please residents by giving them plenty of time to take advantage of discounts. It cuts your billing costs so low it pays for itself over and over again.

Right now, Water Departments everywhere are saving countless man-hours and taxpayer dollars every billing period. So can you! The method is certainly easy enough: use the Burroughs Sensimatic to handle your complete billing job.

What makes the Sensimatic so ideal for water billing? Simply this. It has *all* the timesaving, worksaving features you need to button up the job right on schedule. Take the all-important *sensing panel*, for example. It automatically directs the Sensimatic through the entire billing operation—yes, reduces the job to almost push-button simplicity.

The operator merely indexes the readings and amounts, touches the motor bar. Then the sensing panel takes over. The original bill, original ledger and running journal are all printed automatically. Could you ask a machine to do more, an operator to do less?

First chance you get, call our nearby branch office for a demonstration. (There's no obligation, of course.) Or write: Burroughs Corporation, Detroit 32, Mich.

"Burroughs" and "Sensimatic" are trademarks

Burroughs

Riverside citizens embark on a 3-hour, 40-mile tour of city improvements.

# Citizens' Budget Tour

## *. . . wins backing for needed municipal improvements*

*DOES the city plan a new municipal park and plunge in our area? . . .*

*When will we get an underpass on Eighth Street? . . .*

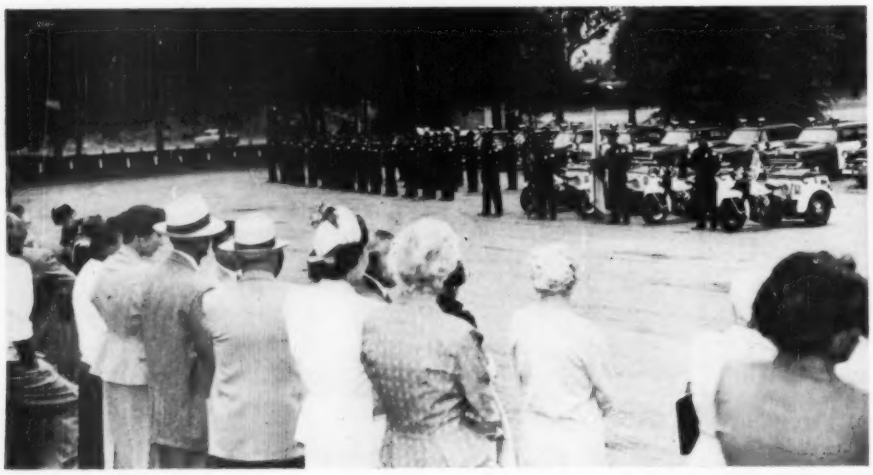
*Will we get a branch library in Magnolia Center? . . .*

By OREN L. KING
*City Manager*
*Riverside, Calif.*

*Does the city intend building more crosstown streets? . . .*

*Are we going to have more parking lots downtown? . . .*

To answer citizen queries much like these, Riverside, Calif., has fostered a direct approach to public reporting—a so-called citizens' budget tour. Last year and this year in



For a climax, the Police Department brings out its Harley-Davidson motorcycles and Ford cruise cars as part of a formal inspection.

# He does the work of 8 men

*—and does it better—*

# when you switch from abrasives to Morton Rock Salt

You remove ice and snow the easy, economical way when you use Morton Rock Salt. For one man and one truckload of Morton Rock Salt does a better job of ice and snow removal than is possible with 8 men and 8 truckloads of abrasives. This means Morton Rock Salt can cut your labor costs as much as 87%!

Unlike sand and cinders, Morton Rock Salt leaves no messy residue in gutters or sewers . . . needs no flushing after a thaw . . . won't blow away or leave a rutted, dirty pavement.

What's more, Morton Rock Salt doesn't merely cover ice or snow. It quickly changes the hardest packed ice or snow into slush, which is easily removed by traffic action or blade.

Morton Rock Salt is inexpensive, too. (It costs about half as much as calcium chloride.) In terms of man-hours and equipment saved, Morton Rock Salt is far more economical than abrasives, and does a better job of ice and snow removal. Morton Rock Salt is easy to store and is non-toxic.

**send for free booklet this week!**

Please send me your free booklet on ice and snow removal.

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Chicago 3, Illinois

The city's new animal structure, under construction, is one of the tour stops.

early June, preliminary to public hearings on the annual budget, the city conducted a community-wide tour of public improvements for its citizens and taxpayers.

### Purposes

Among its many purposes, the tour was designed:

1. To afford the citizens a first-hand look at the end-results of their tax dollars;
2. To keep the public posted on community improvements—past and proposed—which together constitute the city's long-range, multimillion dollar capital improvements program launched in 1954;
3. To give citizens further insight into the scope and character of municipal operations; and
4. To stimulate and sustain citizen interest and participation in civic affairs.

The "tour" idea was first used as a direct means for reporting upon the progress of the "Riverside Plan," the city's long-range capital improvements program. The plan was largely put together by Riverside citizens in cooperation with city officials. To acquaint the original citizen participants and other interested persons with recent accomplishments and with plans for the future, the first "budget tour" was sponsored one year after the inauguration of the plan. In view of its pronounced success as a "reporting technique," the tour has been established as a regular annual event.

Indications are that Riverside's "direct approach" to public reporting has considerable value. Public confidence in the municipal government has grown tremendously. This is attested to by the recent passage of two major bond issues when only two years before, i.e., prior to the inception of council-manager government and the development of the "Riverside Plan," the electorate turned down similar propositions by thumping majorities.

### Preparations

Actual preparations for the annual budget tour are handled largely through the offices of the city manager. Each year a comprehensive program booklet is made up for dis-

— EASTERN METAL FOR TRAFFIC SIGNS — EASTERN METAL FOR TRAFFIC SIGNS —
Red Stop Signs and Parking Signs
STOP
ANY TIME
NO PARKING BETWEEN SIGNS
SPECIAL WARNING SIGNS for CITIES
SLOW 15 MPH
SCHOOL
Eastern "A" Stand with exclusive SPEED-E-LOK Folds and Locks in Place—Won't blow over
MEN WORKING
Positive protection for City Workmen
"Iron Cap" Protects your School Children Official Blue Uniform
Make Eastern Metal your One Source of Supply for All Types and Sizes of Metal Traffic Signs.
Immediate Delivery from Stock—Economical
We also carry a complete line of street name signs, U-Type steel posts, durable stanchions, and aluminum sign bolts.
Send for Illustrated Traffic Sign Folder and Price List.
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Fast-Automatic
Snow Plow Lifting
with
MONARCH DYNA-MIGHT POWER HYDRAULIC CONTROLS
Fan Belt or Electric models available for practically all makes of trucks. See your dealer or write for full details.
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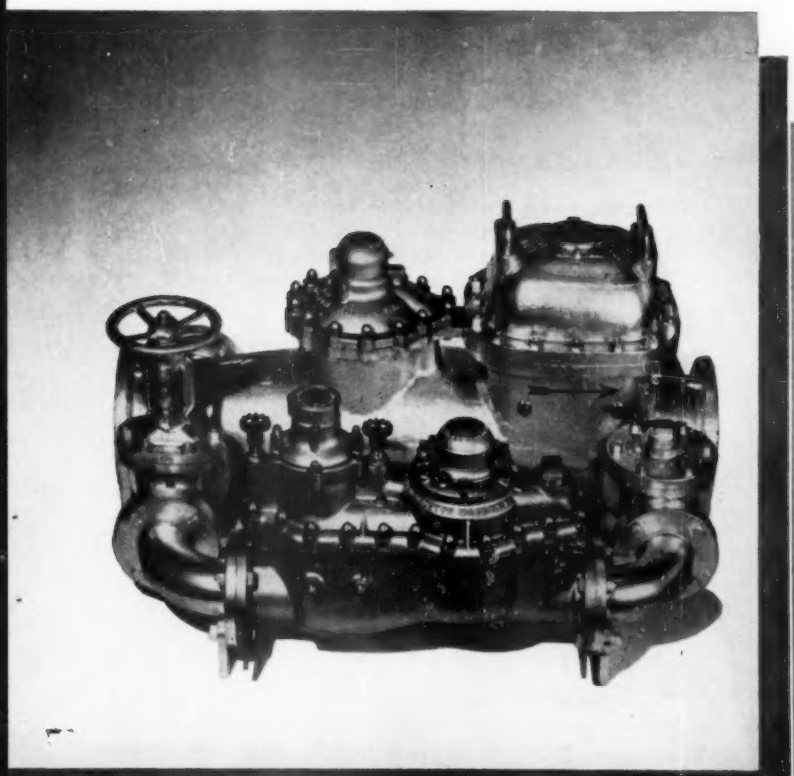
# Are you getting accurate records of the amount of water used through your combination Industrial and Fire Service Lines? You will, if you have Hersey Detector (Fire Service) Meters on those lines. Really worth investigating.



**THIS HERSEY DETECTOR FIRE SERVICE METER**

**equipped with a Bronze Case Compound Meter on its by-pass, is a further refinement of this meter.**

**It meets the demand for accurately measuring rates of flow from small domestic services through ranges required for industrial purposes and for fire service lines, all without obstruction to the flow.**

**This combination also successfully meets the requirements of a large number of water works furnishing water through a master meter to consumers not under their immediate jurisdiction.**

*Listed as standard under the re-examination service of Underwriters' Laboratories, Inc. and approved by Factory Mutual Laboratories for use in Factory Mutual insured properties. Also listed by Underwriters' Laboratories of Canada.*

**HERSEY MANUFACTURING COMPANY**

SOUTH BOSTON, MASS.

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tribution to "citizen tourists." The booklet usually contains an itinerary of the tour, city maps spotting past improvements and proposed projects, illustrative charts, photographs, summary budget schedules, and the city manager's budget message.

### Invitations Extended

Invitations are sent to "Riverside Plan" participants, to city board members, and to other civic groups. Through frequent press releases, all interested persons are invited to take the tour. To date, an average of between 100 and 150 persons have participated in the tour event each year.

Transportation is provided under arrangements made with the local school district and its bus operator. Citizen tourists are asked to assemble at the entrance of Riverside's Fairmount Park where adequate parking space has been set aside for their convenience. The tour usually begins at about 9 a.m. and takes about three hours to complete. Tour buses are escorted by motorcycle officers and directed by a traffic captain in a patrol car equipped with three-way radio. Hence, businessmen or others taking the tour are advised beforehand that messages from their place of business may be conveyed to them at any time during the tour. An extra vehicle also accompanies the group in the event a participant must leave the tour for any reason.

### Tour Guides

Each bus is assigned a "tour guide" and several department heads who, as the tour progresses, describe program highlights and the technical aspects of municipal operations. Rest stops are called at two or three intervals in the course of tour and at one of these mid-morning breaks, coffee and refreshments are served. A pick-up truck, equipped with a public address system, generally accompanies the tour. Thus, at rest stops, city officials use such facilities to communicate with the group.

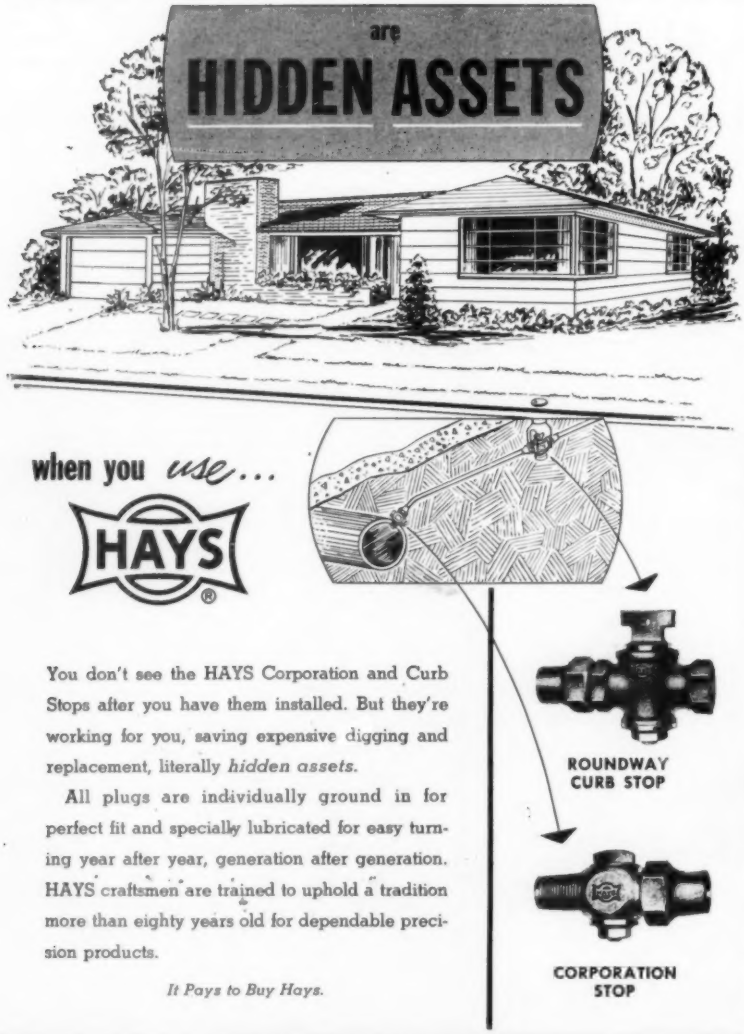
Upon return of the tour buses to Fairmount Park, citizens are then given a full-dress inspection and review of the Riverside Police Department, including all personnel and equipment. In the past, this has been the most dramatic part of the entire program, on which occasion city officials and top-ranking officers at March Air Force Base join to review "Riverside's Finest." This is made possible through a cooperative arrangement made with the county sheriff's office which temporarily handles the city's law enforcement chores during the time this event is taking place.

### Benefits

Although this "reporting technique" has its practical limitations in that an account of city activities is afforded only a relatively small part of the population, it also has a significant advantage: *citizens who participate could never otherwise have obtained as broad or intensive an understanding of the city program.* What is more, city department heads and employees, by reason of the tour, are given due recognition for their respective operations, thus contributing to the enhancement of organizational morale.

Riverside has had good results with a Citizens' Budget Tour. Not only has it served to bring government home to the people, but it has helped make staunch friends in the community.


CORPORATION STOPS and CURB STOPS




You don't see the HAYS Corporation and Curb Stops after you have them installed. But they're working for you, saving expensive digging and replacement, literally *hidden assets.*

All plugs are individually ground in for perfect fit and specially lubricated for easy turning year after year, generation after generation. HAYS craftsmen are trained to uphold a tradition more than eighty years old for dependable precision products.

*It Pays to Buy Hays.*

Join the A. W. W. A. HAYS is one of the eleven Charter Members of the Manufacturers Section of the American Water Works Association.

HAYS

WATER WORKS PRODUCTS
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PIPELINE News from L·O·F GLASS FIBERS COMPANY

# BLUE FLAG PIPE WRAP PROTECTS $33.5 MILLION CALIFORNIA GAS PIPELINE

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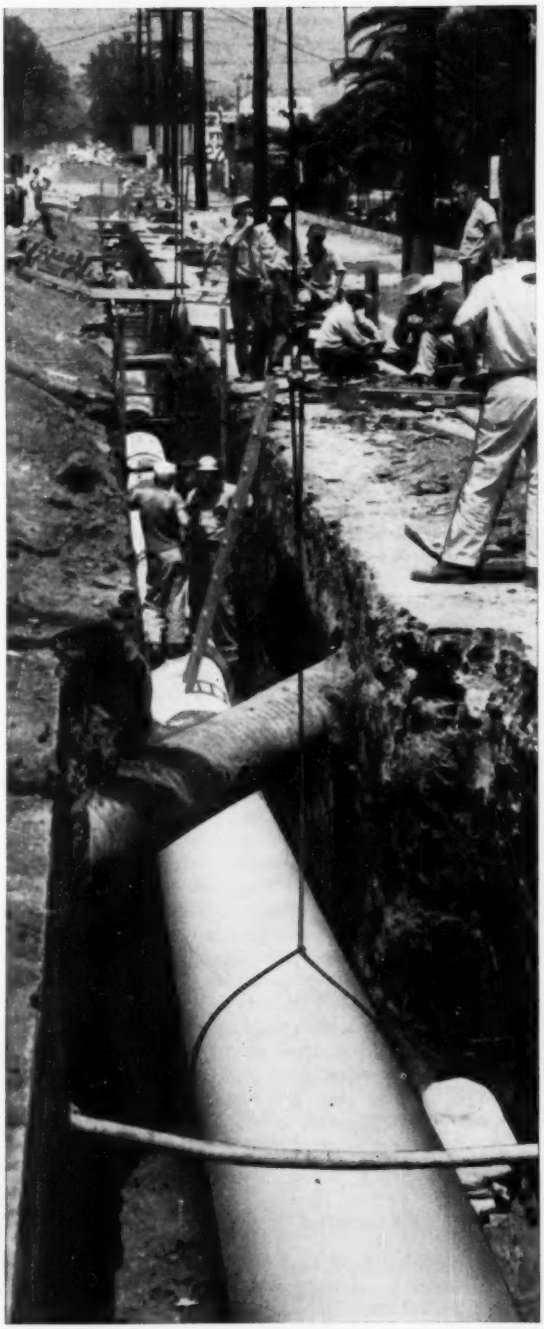

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BLUE FLAG
PIPE WRAP

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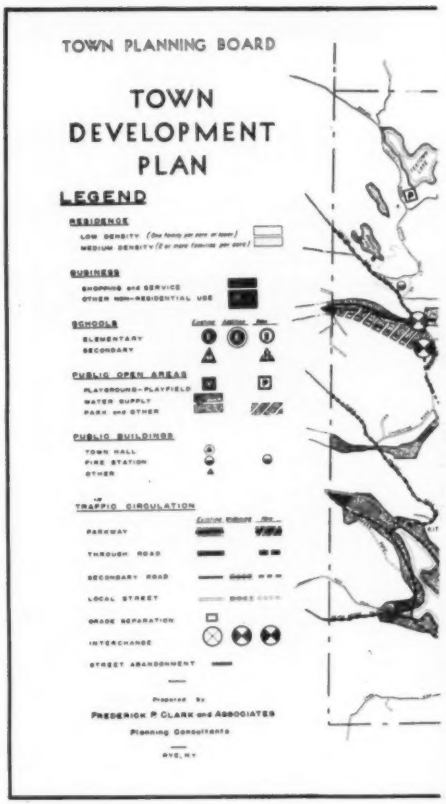
# How We Use Our Master Plan

***Here is a case history of the practical value of a comprehensive plan in a rapidly growing suburban town***

By JOHN H. DOWNING, *Supervisor*
*Yorktown, N. Y.*




IN the paragraphs that follow I shall attempt to convey in my own layman's language some of the planning and zoning problems of a rapidly growing rural-suburban community and the steps we, as municipal officials, have taken to meet them. It is my hope that officials trying to cope with the problems of too-rapid growth in other suburban areas will understand through our experience how the tools of planning and zoning can help them in a practical and useful way. As you will see, this is a story of cooperation among various municipal boards; of a partnership between citizenry and government; and of coordination between professional consultants and existing town boards. I cannot stress too strongly the need for a very close relationship among these groups, for without such well-organized teamwork, which has produced our town development plan and our continuing planning program, it would be hard to realize what our town might be like. Here then is the story of Yorktown's planning program:

### Background

Yorktown, which in 1950 had a population of some 4,700 persons is located about 35 miles north of New York City in suburban Westchester County. Physically large with an area of 40 square miles, the town, until four years ago, was primarily a farming community with many dairy and fruit farms and a scattering of estates. At that time four small business areas, mostly retail stores and shops, satisfied our everyday purchasing needs. We had no major industries, and even today after rapid growth there are none. However, the presence of good road connections, an excellent municipal water supply with a network of over 60 miles of high-pressure water mains, the nearness of good railroad service, the uncrowded residential character of the town, plus the availability of gently rolling land suitable for building made Yorktown—particularly its northern half—a choice location for suburban home development for New Yorkers trying to escape stamp-sized apartments in declining neighborhoods. That this was recognized by land developers, is evidenced by the fact that since 1950 and particularly since 1952 our population has jumped to over 11,000.

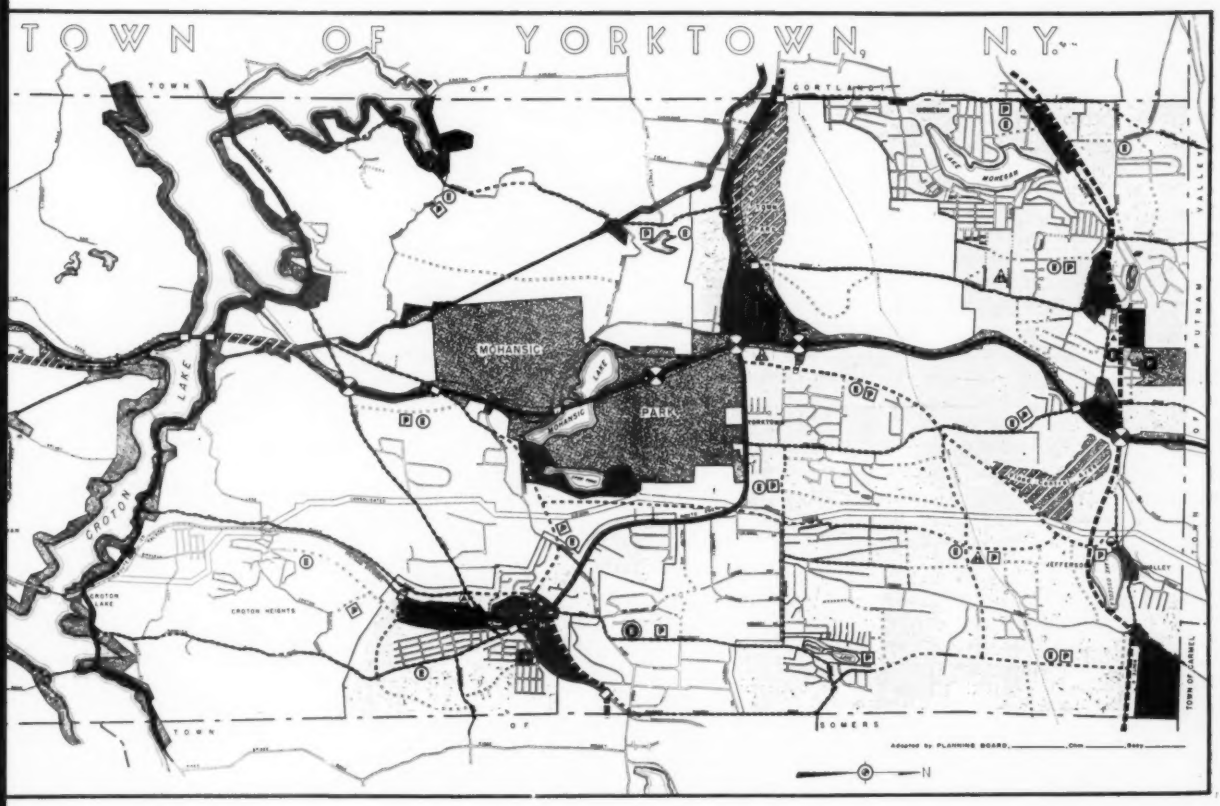
### First Subdivision Magnifies Problems

In 1953, the problems that we as municipal officials encountered in reviewing one of the first large subdivisions to be developed in the new wave of growth, shocked us into the realization that our subdivision regulations and zoning ordinance were seriously deficient and that we could do little more than tinker with these unless we had a long-range and comprehensive development program. Accordingly, the town board contracted with Frederick P. Clark and Associates, a nearby planning consultant firm, to provide us with the following services:

1. A study of Yorktown's population, its past growth, its changing character, and distribution and prospects for future growth.
2. A study of economic factors involved in the growth of the town, including commuting, trade, and manufacturing.
3. An analysis of trends of development of the various sections of the town.
4. A study of desirable objectives for future town development.
5. Preparation of a detailed plan for future land development and use.
6. Review of the present zoning ordinance and the preparation of a revised zoning ordinance to meet the standards of present uses and development.
7. Preparation of a long-range program for carrying out the recommendations included in the comprehensive plan for town development.

The first six months were taken up mostly with the collection of data by the consultants and the transmitting of this data to the town in the form of reports.

Following this, eight to ten large study maps were prepared showing the present land use, drainage, present population, present zoning, land suitable for development, special districts, and the present road system.




These maps were studied by the various boards to acquaint them with the present conditions of the town.

## Policy Decisions

Next a series of sketches on the various elements of the proposed master plan were presented, each map showing one or two features of the total master plan. These maps were then studied in relation to one another, and the question of general town policy regarding each of these various elements was discussed at joint meetings of the various boards. Decisions which had to be made were:

a) How should land in various sections of the town be used?

b) What should be the town's maximum future population?

c) What local road connections will be needed, and what should be the relationship of the town roads to proposed county and state roads?

d) What type of recreation facilities were to be provided and what was the best means of obtaining these facilities? Was the town to have an over-all recreation program or was private play space to be provided in the subdivisions only?

In making this decision the town requested the town attorney to investigate the possibility of requiring cash in lieu of land for recreation area from subdividers so that the town might develop several larger and well located playgrounds rather than to take small areas of play space in each subdivision as it was approved. As a result of this inquiry an opinion was given by the State Attorney General's Office that such a procedure was legal and possible provided that the monies so collected were earmarked for recreation purposes only and that the town had an over-all recreation plan.

e) Where should new business areas in the town be located? Should they be located in open areas outside the present small business areas, or should they be located near these small business areas in order that these old values might be protected and that the new business and old business should work to complement each other rather than to compete with the other?

After these basic policy decisions regarding the future development of the town were made, the proposed plan was drawn up by the consultants and then studied by the town in its submitted form. This plan was then taken to a series of public meetings where comments both pro and con were received from the town's people. A review was then made by the town of these comments, and additions and changes were made to the plan in line with some of the major desires expressed at these meetings. The final master plan was then adopted on August 10, 1956.

The following are items which have been accomplished or have been put into effect by the town since the beginning of our planning program:

***Business Development.*** The plan proposed an increased area for business use around the existing shopping areas in several sections of Yorktown. In compliance with this zoning revisions that increase our "Yorktown Heights" business area

by approximately 16 acres have been made. Since this change two new shopping facilities with 25,000 square feet of floor space and off-street parking for 300 cars are now nearing completion—all without cost to the town. Along one of the major U. S. routes through town 25 acres were zoned as a planned retail business district to accommodate a proposed shopping center. At present the town is considering two further changes of zone to permit two motels, which total 130 units and have a swimming pool, restaurant, and ample parking area.

***Road Connecting.*** The plan shows numerous road changes, including new roads to be provided in areas of rapid development, existing roads to be widened or relocated to accomodate increased traffic, and local connections to afford a continuous pattern for traffic circulation. The changes which have been accomplished to date are: (1) the relocation and construction of one of our more important town highways; (2) a reservation for a new road having an 80-foot right-of-way connecting a U. S. route with a state highway—a distance of about 1½ miles—this land to be given without cost to the town by developers; (3) a reservation for a proposed relocation of a New York State highway for a distance of 1,800 feet to bypass thru traffic away from the center of the Yorktown Heights business district; (4) the acquisition of 3,000 feet of a former railroad right-of-way from Westchester County to be used as a secondary road connecting two State highways in the Yorktown Heights business area; (5) the construction of about 800 feet of a new town road; and (6) a reservation for the widening of a state route to a 60-foot right-of-way between two U. S. routes.

***Town Facilities, Including Schools.*** The plan shows a considerable increase in the number of town facilities that will be needed in the future, including playground sites, school sites, both elementary and secondary, flood control area, extension of town offices and new fire stations. The Board of Education have tentatively approved the master plan as a basis for their own school planning. Two school sites shown on the plan are now under consideration by the boards for the construction of new schools.

Discussion has been held with officials of Yorktown's two fire districts, aimed at establishing two new fire stations. Because of the large amount of subdivision activity both present and contemplated, it has become necessary to acquire an additional source of water supply and increase the storage facilities for domestic use and fire protection. This project will cost over $500,000 and is expected to be constructed during 1957. The town has required reservations of cash in lieu of land from approximately 20 developers, totaling approximately $17,000 for the purchase of playground sites as shown on the master plan. In some instances developers have been requested to donate land for school purposes, and two subdividers have complied with this request. The Planning Board has considered the reservation of part of a subdivision for flood control purposes as shown on the plan.

Because of a substantial offer recently made to the town for a campus type, large, office development, the town now has under consideration a new research laboratory and executive office district. This district is a planned district requiring site plan approval by the Planning Board for all features shown on the site and access thereto. A public hearing has been scheduled for the purpose of amending our Zoning Ordinance to include this type of district. If adopted this would affect a parcel of 224 acres in the southern end of the town.

***Residential Areas.*** The plan shows that about two-thirds of the town should be developed for low density residence (one acre lot or greater) and the other one-third for medium density (½ acre lots). Certain areas in the southerly part of the town are presently being considered for two acre zoning. A public hearing has been scheduled to change from ½ acre to one acre certain portions as recommended on the master plan. The town is also considering removing the 5,000 square foot lot area district as recommended in the master plan.

***Continuous Planning.*** The services of the consultants have proven so valuable to the town during this period, and due to the fact that the growth of the town was rapidly increasing, the town officials, at the completion of the contract, immediately entered into a yearly contract for day-to-day planning advisory service to:

1. Advise the Planning Board on planning and zoning matters coming before the Board, usually on reference from the Town Board.
2. Assist the Planning Board in reviewing and, where necessary, revising the town development plan, zoning ordinance, and subdivision regulations.
3. Assist the Planning Board in reviewing applications for approval of new subdivision plans.
4. Attend regular meetings of the Planning Board, and special meetings when possible.
5. Attend meetings of the Town Board, upon request, on matters pertaining to services as outlined.
6. Advise the Zoning Board of Appeals, upon request, where services may be of value in review of special zoning problems.
7. Assist the town in connection with inter-community, county and state meetings concerned with the planning and development of the town.
8. Assist the town in preparing programs for the accomplishment of various improvements recommended in the town development plan.

It would be hard to realize what our town would be like today without a town development plan, and the constant advice and counsel of experts in the planning field. We know that the comparatively few thousands of dollars spent on planning in Yorktown in the past three years will save our town millions of dollars in the years to come.

# *Ten Top Civil Airports*

THE TEN AIRPORTS leading the country in total takeoffs and landings during the fiscal year 1956 include:

| | |
|---|---|
| Chicago (Midway) | 380,339 |
| Miami | 296,154 |
| New York (La Guardia) | 272,791 |
| Los Angeles | 266,455 |
| Atlanta | 263,628 |
| Denver | 260,921 |
| Charleston, S. C. | 255,464 |
| Washington, D. C. | 240,890 |
| Teteboro (N. J.) | 237,049 |
| Phoenix | 235,748 |

The ten leading airports in total takeoffs and landings, excluding purely local flights include:

| | |
|---|---|
| Chicago (Midway) | 366,079 |
| New York (La Guardia) | 260,661 |
| Washington | 237,590 |
| Los Angeles | 228,917 |
| Dallas | 206,436 |
| Atlanta | 188,467 |
| Miami | 183,109 |
| Albuquerque, N. M. | 178,941 |
| St. Louis | 176,353 |
| Cleveland | 173,162 |

Complete statistics on air traffic during the last fiscal year are contained in the publication "Federal Airways Air Traffic Activity," on sale at the U. S. Department of Commerce for 50 cents.

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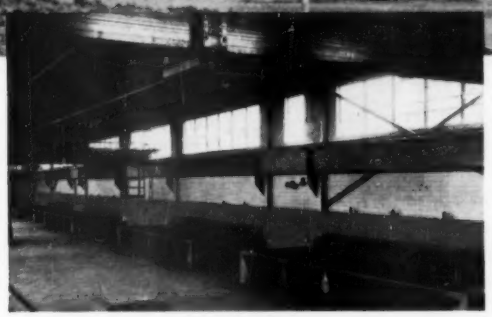

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# Zoning & Planning Notes

## Height of Buildings Near Airport— Sovereign Immunity

TENNESSEE. *Davidson County* v. *Harmon*, 292 South Western (2d) 777 (Supreme Court, July 20, 1956).

In this case, a State mental hospital was built in 1852 and subsequently enlarged; and in 1929, over the State's objections, an airport was established in the vicinity by the City of Nashville. The County zoning regulations for the appropriate agricultural district restricted the height of buildings to 2½ stories and 40 feet. A new building was proposed on the hospital grounds, five stories and about 74 feet high, and located within 4,000 feet of, and in direct line with, a runway of the Nashville Municipal Airport. Other existing buildings were higher and more directly in the line of flight. The County argued that this proposed building would constitute a hazard to passengers on airplanes and to prospective patients of the institution, and the State argued that its building operations were exempt from local zoning ordinances.

In the opinion, the Court first restated the theory of the sovereign's immunity from lawsuits, and of the State's immunity from local zoning ordinances. It was then indicated that, while the Legislature could expressly authorize such County ordinances to apply to the State, in this situation it had not done so, although the problem was quite apparent because the State Capitol was located within this county.

## Coverage Regulations— Unenclosed Porch

NEW YORK. *Application of Cervini* v. *Shorten*, 152 New York Supplement (2d) 905 (Supreme (lower) Court, May 4, 1956).

The Garden City zoning ordinance restricted lot coverage in one of the residence districts to 25%, i.e., 2,225 square feet on a lot of 8,900 square feet. The owner of a building, located on such a lot and with an area of about 2,215 square feet, subsequently erected an overhanging metal awning on the rear, covering an additional area of 240 square feet, without obtaining a permit. The ordinance apparently permitted roof overhangs not exceeding 2 feet. The owner claimed that this additional area was a "patio", and the local authorities insisted that it was a "porch", and so in violation of the zoning law.

In upholding the latter's position, the Court pointed out that the coverage restrictions applied to "building area," that the word "building" was defined to include the word "structure," and that a "structure" was in turn defined to include a porch, whether enclosed or unenclosed. The Court then held that this metal awning constituted an unenclosed porch, and pointed out that otherwise an owner could cover an entire side or rear yard with such a structure, or with a cloth awning. The fact that the ordinance explicitly excluded the area of unenclosed porches in the computation of floor area ratio and liveable floor area was held to be irrelevant. It was also pointed out that the structure violated the rear yard requirements.

The inclusion of porches in computing floor area ratio, coverage and yard regulations is a difficult minor problem in zoning. If unenclosed porches are excluded, they may easily be later enclosed; and the development of jalousie windows for porches has further complicated the situation. Probably the best solution is explicitly to include all porches for all types of regulations, and then to adjust the figures for each regulation to avoid hardships — possibly with special provisions for smaller lots.

## Second Dwelling on Residential Lot— Minimum Lot Area

NEW YORK. *Grucn* v. *Simpson*, 153 New York Supplement (2d) 287 (Supreme (lower) Court, May 9, 1956).

In this case a separate cottage, located on a hillside, near the lower edge of a residential lot, was used for some time as servants' quarters. The entire lot had an area of over 21,000 square feet, and at least 12,900 square feet were required by the applicable zoning regulations for each dwelling unit. Subsequently, the cottage was rented to a separate family. After several years, the Village authorities sent a notice of a zoning violation and suggested that a variance might perhaps be granted.

The Court approved a grant of a variance, primarily because of the topographical difference and because the separate building had existed for a long time without affecting the neighborhood. However, the Court repeated the rule that, at least in the Second Department, for an area variance—as contrasted with a use variance—a showing of practical difficulty was sufficient, and there was no need to show special hardships as well. For this reason, the fact that the present owner had purchased with knowledge of the zoning restrictions was held to be irrelevant.

## College Dormitory as Single-Family Dwelling

NEW YORK. *Application of LaPorte*, 152 New York Supplement (2d) 916 (Appellate Division, June 25, 1956).

In this case, a Roman Catholic college proposed to build a four-story dormitory for some 60 students. The proposed side yards conformed to the zoning requirements if the proposed building were regarded as a single-family dwelling, but not otherwise.

After reviewing the definition of a "family" in the ordinance, the Court held that this dormitory constituted a single-family dwelling. One judge dissented on the ground that over 60 students, each coming from a separate family, should not be regarded as one family.

## Storage of Fuel Oil in Business District

CONNECTICUT. *Fisher* v. *Board of Zoning Appeals of Town of Monroe*, 122 Atlantic (2d) 729 (Supreme Court, May 8, 1956).

This case involved a proposed tank for storage of fuel oil, with no structure and no office on the premises, located in a business district. The business district regulations were prohibitory in form, and forbade *inter alia* any manufacture or processing except when incidental to a retail business on the premises. The Court held that a "business district" should be interpreted as permitting any business use not explicitly excluded, and that this tank was used in connection with a retail business. The fact that warehouses were explicitly permitted in industrial districts was held to be irrelevant.

## Redevelopment of Blighted Open Land

MASSACHUSETTS. *Opinion of the Justices*, 135 North Eastern (2d) 665 (Supreme Court, July 2, 1956).

The Massachusetts House of Representatives requested an advisory opinion on a proposed urban redevelopment law. This law would permit redevelopment of "substandard," "decadent," or "blighted open" areas, and contained a provision for tax exemption for a stated period.

In the advisory opinion, the Court pointed out that urban redevelopment corporations were declared to be "instrumentalities of the commonwealth," and so tax exemption was upheld. In a previous Massachusetts decision, judgment was reserved on the question of redevelopment of blighted open areas, but the Court here explicitly upheld such redevelopment.

## Industrial Development Corporations

ARKANSAS. *Halbert* v. *Helena-West Helena Industrial Development Corporation*, 291 South Western (2d) 802 (Supreme Court, June 25, 1956).

In this case, a State Industrial Development Commission had been established under an enabling act to assist local nonprofit corporations to attract new factories. A local development corporation was set up, and a plan was developed to issue $800,000 of industrial development bonds for the purpose of building a factory, installing machinery, and then conveying the building and machinery to a rubber tire manufacturing company, which would assume the bond issue.

In the opinion, the Court upheld these proceedings in general, but with certain exceptions. Two provisions were invalidated under the Arkansas State Constitution—one authorizing a locality to purchase membership in a local industrial development corporation, and the other providing for tax exemption. The other provisions were held to be severable.

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**Buffalo and Rochester, N. Y.,** are typical of the hundreds of cities throughout the nation's ice belt now using *straight* rock salt for ice and snow control. Here are some of the reasons why these cities have adopted this method . . . and eliminated sand and cinders from their winter programs.

According to Mr. Frank J. Stahl, Buffalo's Director of Streets, safety is the most important factor. "During snow and ice storms, straight rock salt makes our streets much safer for the daily traffic load of approximately 400,000 vehicles."

In contrast, the "old method of sand and cinders is beneficial to only a few drivers. These abrasives generally blow away soon after they're applied, and they never melt any ice."

**Mr. Stahl also reports** that straight rock salt has proved to be far more economical than any other control method. "Even for a continuous operation of salting streets, less overtime is required. That's because rock salt goes so much further than abrasives. In fact, only abnormal conditions require a repeat salting during an 8-hour period. When sand is used, it must be reapplied time and time again during the same shift."

Using straight rock salt, Buffalo (with over 1,900 curb miles of street) has been able to put a "watchdog" method into effect. Under this system, ten spreader operators are on duty for each of three shifts over the 24-hour period. This system is in effect 7 days a week. And to implement the 10 salt trucks on "watchdog patrol," an additional 10 trucks are in readiness if the situation demands attention on lesser-used arteries, side streets, etc.

**Other benefits** from the use of straight rock salt in Buffalo include an "uplifting of employee morale." Because the work goes faster, and with better results, Mr. Stahl reports that "the use of salt has been greeted enthusiastically by our workers. They now get a feeling of accomplishment and satisfaction."

**From Rochester, N. Y.,** comes a similar story on rock salt. Safety is also the prime consideration here, according to Frank J. Vicaretti, Superintendent of Streets. "With rock salt our traffic moves freely, and without delays. Icy ruts on the streets are completely eliminated. And even during last winter's heaviest snowfall—16″—with straight rock salt we kept our streets clear."

Speed is a big factor, too. "Applying straight rock salt from trucks is much faster than using plows and graders, or spreading sand and cinders. For example, 16 salt trucks will handle a 2″ to 4″ snowfall, where over 100 plows might be ordered out for the same fall."

**Rock salt's effectiveness** in controlling ice and snow also permits a new, economical maintenance program in Rochester. This program involves 16 salt trucks from 4 AM to noon; and 16 trucks from noon to 8 PM. A skeleton crew (10 trucks) takes over from 8 PM to 4 AM except in heavy-snowfall emergencies, where six extra men are held over.

Mr. Vicaretti reported additional advantages from his use of straight rock salt. "The cost of handling and hauling snow, of course, has been greatly reduced. And mixing sand and cinders is a time-consuming job we've completely eliminated. There's free drainage in the sewers during the winter, too; and no spring cleanup expense."

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Contributed by WILLIAM JABINE, Attorney

# Zoning Briefs

## Connecticut

DELEGATION OF AUTHORITY TO TOWN MEETING INVALID. Action of zoning commission in changing zoning classification from residential and agricultural to industrial held null and void because it was referred to town meeting before taking effect. Court ruled that power rested in zoning commission and could not be delegated to town meeting. Olson v. Town of Avon, 123 A. 2d 279. (Supreme Court of Errors and Appeals, May 29, 1956).

## Georgia

OWNER FAILS TO EXHAUST REMEDIES IN PROPER TRIBUNALS. House owner, through writ of mandamus, tried to compel issuance of building permit for addition of bathroom and porch to house in one- and two-family residence zone. Remedy held improper as he had not exhausted his right to appeal first to Board of Adjustment and later to Superior Court. Wofford v. Porte, 93 S.E.2d 690. (Supreme Court, July 10, 1956. Rehearing denied July 24, 1956.)

## Indiana

FAILURE TO CHALLENGE ENTIRE ORDINANCE MAKES PETITION DEFECTIVE. In second action concerning same tract, complaint was dismissed because it did not charge that master zoning act was void in its entirety and so failed to invoke equitable jurisdiction of Court. State v. Superior Court of Marion County, 135 N. E. 2d 517. (Supreme Court, June 29, 1956).

## Maryland

LEGAL SHORTCUT HELD IMPROPER: "SPOT-UNZONING" FEARED. When an application for a special exception to permit the construction of a Post Office and garage in a residence zone was denied, owners of the property concerned sought declaratory judgment instead of taking usual appeal. Their principal ground was that the character of the area had so changed that the ordinance had become arbitrary and unreasonable. The Court held that they had selected an improper remedy and noted that if the Declaratory Judgement Act could be used in this manner it might create a system of "spot unzoning" which would defeat the purposes of the average zoning ordinance. Mayor and City Council v. Seabolt, 123 A. 2d 207. (Court of Appeals, June 6, 1956.)

## Massachusetts

COUNCILMAN FAILS TO BAR DRIVE-IN THEATRE. Permission to construct drive-in theatre in area zoned for heavy industry denied at suggestion of City Council. Board of Appeal reversed denial and granted permit. Councilman brought suit in his capacity as a "municipal officer" (phrase used in statute). Court held that as he had "no duty to perform as councilman in relation to building code or zoning" he had no standing and dismissed suit. Carr v. Board of Appeal of Medford, 134 N.E. 2d 10. (Supreme Judicial Court, May 3, 1956.)

## Michigan

ORDINANCE PROHIBITING TRAILER PARKS HELD UNREASONABLE. Ordinance forbidding trailer parks in township which was largely undeveloped held to have no relationship to promotion of health, safety, morals or public welfare. Court also pointed out that as Michigan statute governed trailer parks, they could not be regarded as nuisances per se. Smith v. Building Inspector of Township of Plymouth, 77 N.W. 2d 332. (Supreme Court. June 4, 1956.)

REFERENDUM ON AMENDMENT HELD PROPER. Zoning ordinance amended permitting establishment of drive-in theatre in residence zone. Referendum demanded by protesting neighbors, but objected to on ground that provision for referendum applied only to passage of original ordinance and not to amendments thereto. Court held that referendum provision applied to amendments as well as to original ordinances and permitted it to proceed. Stadle v. Township of Batt'e Creek, 77 N.W. 2d 329. (Supreme Court, June 4, 1956.)

## New Jersey

ART MUSEUM WINS RIGHT TO OFF-STREET PARKING. Art Museum desired to use lot for off-street parking in residence zone. Court upheld action of local authorities in granting permission, saying: "In this era of congested traffic and inadequate facilities, a zoning ordinance of any urban municipality that contains no provision for off-street parking is outmoded." James v. Board of Adjustment of Town of Montclair, 122 A. 2d 660. (Supreme Court, Law Division May 10, 1956.)

BUFFER ZONE DISAPPROVED. Amendment to zoning ordinance set up office building district consisting of land on which there was dwelling, apartment house and several vacant lots. Owners objected to restriction to office use and contended that area should be opened up to general business and not used as buffer zone between business and residential areas. Evidence showed that property would be worth 25% less for office building use than for general business. Considerable testimony concerning business development of whole neighborhood which had included many changes in zoning. Court held amendment invalid, not meeting definition of comprehensive planning, and suggested that rezoning of whole area was indicated. Four to three decision. Raskin v. Town of Morristown, 121 A.2d 373. (Supreme Court, Mar. 21, 1956).

## Ohio

ANTICIPATION OF ZONING CHANGES RULED OUT AS EVIDENCE. In eminent domain action in which City of Euclid sought condemnation of property for park purposes, owners attempted to show that development of community would bring about change in zoning ordinances and so would enhance value of their property by permitting building of multi-family residences. Court held that evidence of value must be limited to uses within zoning restrictions and that as there was no evidence of any change in the zoning regulations within the foreseeable future, any values predicated on such possible changes would be purely speculative and so inadmissible. City of Euclid v. Lakeshore Company, 133 N.E.2d 372. (Court of Appeal, Cuyahoga County, Mar. 22, 1956).

LOW RENT HOUSING HELD TO ADVANCE PUBLIC GOOD AND SO TO JUSTIFY ZONING CHANGE. Emergency ordinance permitted construction of low rent housing project on 18-acre tract separated from residence area by wooded area 50 ft. wide, with fence at boundary. Court held that zoning authority did not abuse its discretion as the project was for the public good, saying that a zoning ordinance must be presumed valid unless clearly shown to be arbitrary and capricious. Pearce v. City of Youngstown, 135 N. E. 2d 430. (Court of Appeals, Mahonong County, Oct. 5, 1954).

## Oklahoma

CEMETERY BARRED AS TOO CLOSE TO RESIDENCE. State statute prohibited cemetery within ¾ mile of "any tract of land platted into lots or blocks or otherwise subdivided for residence purposes" when such land had been sold in good faith for such purposes prior to the location or opening of the cemetery. Court ruled that cemetery could not be established despite fact that all of usual formalities incidental to filing plats had not been completed. Wilson v. Queenan, 299 P.2d 795. (Supreme Court, June 26, 1956.)

## Pennsylvania

ATTEMPT TO CHANGE VOTE UNSUCCESSFUL. Amendment downgrading area by permitting apartment houses in single family residence zone adopted by 11 to 2 vote, a two-thirds vote being required. Previous resolution approving and recommending passage of change had been passed 10 to 4, and after passage of amendment and adjournment of meeting, attempt was made to change vote. Court ruled that amendment must stand as actual vote on passage had fulfilled requirements. Wynne v. Township of Lower Marion, 124 A.2d 487. (Superior Court, July 17, 1956.)

## Rhode Island

TOO MANY UNITS FOR SIZE OF LOT BARS APARTMENTS. Exception sought to permit erection of apartment buildings in one-family residence zone. Provision for superintendent's quarters in basement brought number of residence units to 35 and thus violated ordinance requiring 4,800 square feet for each unit. Court held basement not an accessory building and ruled issuance of permit improper. Adams v. Zoning Board of Review, 124 A.2d 242. (Supreme Court, June 28, 1956.)

SMALL SAWMILL PROHIBITED IN RESIDENTIAL AREA. Permission to operate sawmill for production of kindling and stove wood in residence zone granted by Zoning Board of Review. On appeal Court held that act amounted to rezoning and so was invalid as it usurped powers given to City Council. De Stefanis v. Zoning Board of Review, 124 A.2d 544. (Supreme Court, July 20, 1956.)

## Tennessee

SAFETY AND ZONING ORDINANCES DISTINGUISHED. Distinction drawn between safety and zoning ordinances in action which arose when City sought to enforce ordinance forbidding gasoline storage tanks of more than 1,100 gallons capacity at filling stations. Court ruled that City could not, under safety regulation, bar one owner when others were using larger tanks which were in existence when ordinance was passed, thus rejecting non-conforming use theory used in zoning. Consumers Gasoline Stations v. City of Pulaski, 292 S.W.2d 735. (Supreme Court, July 20, 1956.)

COUNTY CANNOT ENFORCE ZONING ORDINANCE AGAINST STATE. County sought injunction against state to prevent violation of zoning ordinance by erecting new building on grounds of State Hospital which would be 33 ft. 11¾ inches higher than the 40 feet limit imposed by zoning ordinance because of proximity to airfield. Court ruled that county could not enforce zoning ordinance against state and pointed out that hospital had been on site since 1852. Davidson County v. Harmon, 292 S.W.2d 777. (Supreme Court, July 20, 1956.)

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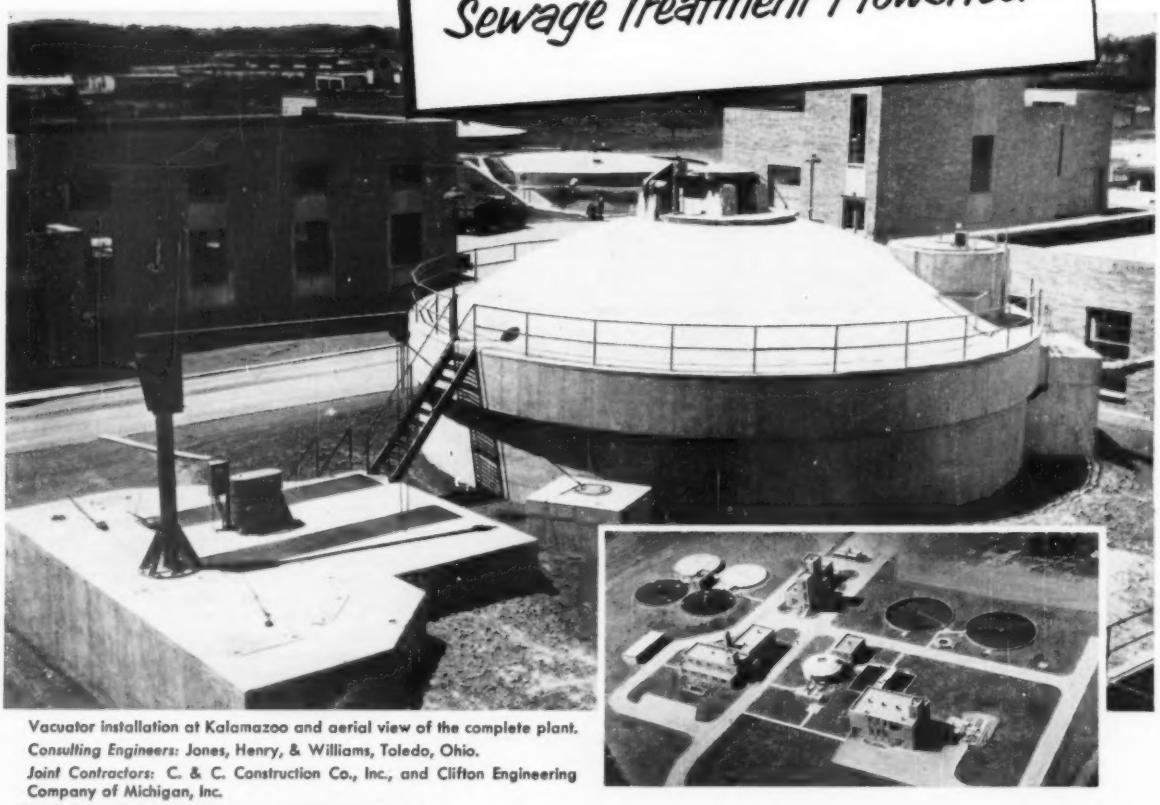

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# Conventions — When & Where

Conventions listed this month for the first time are indicated by an asterisk (*)

**Dec. 2-5—Philadelphia, Pa.**
PENNSYLVANIA LEAGUE OF CITIES. Annual Convention (Bellevue-Stratford). Exec. Dir., John N. O'Neil, Room 302, City Hall, Harrisburg, Pa.

**Dec. 3-7—Stillwater, Okla.**
OKLAHOMA SHORT SCHOOL FOR WATER & SEWAGE OPERATORS. Annual Short School (Student Union Building, Oklahoma A&M College). Exec. Sec., H. M. Crane, Sanitary Engineer, State Department of Health, 3400 N. Eastern, Oklahoma City, Okla

**Dec. 4-7—Chicago, Ill.**
AMERICAN PUBLIC WELFARE ASSOCIATION. Annual Convention (Edgewater Beach Hotel). Exec. Dir., Loula Dunn, 1313 E. 60th St., Chicago 37, Ill.

**Jan. 7-11—1957—Washington, D. C.**
HIGHWAY RESEARCH BOARD. Annual Meeting (Sheraton-Park). Dir., Fred Burggraf, 2101 Constitution Ave., Washington, D. C.

**Jan. 17-18—New York, N. Y.**
NEW YORK SEWAGE AND INDUSTRIAL WASTES ASSOCIATION. Annual Meeting (Hotel Belmont Plaza). Exec. Sec., R. C. Sweeney, State Department of Health, 21 N. Broadway, White Plains, N. Y.

**Jan. 23-25—Berkeley, Calif.**
INSTITUTE OF TRANSPORTATION AND TRAFFIC ENGINEERING. Annual California Street and Highway Conference (Durant and Shattuck Hotels). Exec. Sec., Bob Glenn, Engineer and Extension Representative, I.T.T.E., University of California, Berkeley, Calif.

**Jan. 28-Feb. 2—Chicago, Ill.**
AMERICAN ROAD BUILDERS' ASSOCIATION. Annual Convention and Road Show (Chicago Amphitheater). For further information address the ARBA, 600 World Center Bldg., Washington 6, D. C.

**Jan 31-Feb. 1—Wilmington, Calif.**
ANNUAL INSTRUMENT SHORT COURSE. (Los Angeles Harbor Junior College). Sec.-Treas., George Forster, 640 Fillmore St., Fillmore, Calif.

**Feb. 6-8—Indianapolis, Ind.**
AMERICAN WATER WORKS ASSOCIATION—INDIANA SECTION. Annual Meeting (Sheraton-Lincoln). Sec.-Treas., R. J. Baker, 113 Monument Circle, Indianapolis.

**Feb. 12-14—Buffalo, N. Y.**
ASSOCIATION OF TOWNS OF THE STATE OF NEW YORK. Annual Meeting (Hotel Statler). Exec. Sec., Edward F. N. Uthe, 91 State St., Albany, N. Y.

**Feb. 19-22—Palo Alto, Calif.**
CALIFORNIA MUNICIPAL UTILITIES ASSOCIATION. Annual Meeting (Ricky's Studio Inn Hotel). Sec., F. V. Frey, 100 N. Garfield Ave., Room 108, City Hall, Pasadena, Calif.

**Feb. 25-27—Atlanta, Ga.**
ASSOCIATION OF ASPHALT PAVING TECHNOLOGISTS. Annual Meeting (Atlanta Biltmore). Sec.-Treas., Ward K. Parr, 1224 E. Engineering Bldg., Box 376, Ann Arbor, Mich.

**Feb. 27-March 1—Atlantic City, N. J.**
ASSOCIATION OF HIGHWAY OFFICIALS OF THE NORTH ATLANTIC STATES. Annual Convention (Traymore Hotel). Sec-Treas., Kenneth D. Rice, 1035 Parkway Ave., Trenton, N. J.

**March 1-2—Houston, Texas.**
TEXAS BEACH AND POOL ASSOCIATION. Annual Meeting (Shamrock-Hilton Hotel). Sec., V. M. Ehlers, State Health Department, Austin, Texas.

**March 3-8—College Station, Texas**
TEXAS WATER AND SEWAGE WORKS ASSOCIATION. Annual Meeting (Student Union, Texas A&M College). Sec.-Treas., Mrs. E. H. Goodwin, 2202 Indian Trail, Austin, Texas.

***March 5-9—Washington, D. C.**
AMERICAN CONCRETE PIPE ASSOCIATION. Annual Convention (Shoreham Hotel). Managing Dir., Howard Peckworth, 228 N. LaSalle St., Chicago, Ill.

**March 10-12—Charleston, S. C.**
SOUTHERN ASSOCIATION OF COMMERCIAL ORGANIZATION EXECUTIVES. Annual Convention (Francis Marion Hotel). Sec.-Treas., Opie L. Shelton, Chamber of Commerce, Baton Rouge, La.

**March 11-14—Washington, D. C.**
ASSOCIATED GENERAL CONTRACTORS OF AMERICA, INC. Annual Convention (Statler and Mayflower Hotels). Exec. Dir., James D. Marshall, 1227 Munsey Bldg., Washington 4, D. C.

**March 13-15—Atlantic City, N. J.**
NEW JERSEY MOSQUITO EXTERMINATION ASSOCIATION. Annual Meeting (Chalfonte-Haddon Hall). Sec., Bailey B. Pepper, Rutgers University, New Brunswick, N. J.

**March 13-15—Atlantic City, N. J.**
NEW JERSEY SEWAGE AND INDUSTRIAL WASTES ASSOCIATION. Annual Meeting (Traymore Hotel). Sec.-Treas., M. S. Kachorsky, P. O. Box 68, Manville, N. J.

***March 17-20—Charleston, S. C.**
AMERICAN WATER WORKS ASSOCIATION—Southeastern Section. Annual Meeting (Francis Marion Hotel). Sec., N. M. deJarnette, Division of Water Pollution Control, State Department of Health, 245 State Office Bldg., Atlanta, Ga.

**March 17-21—San Francisco, Calif.**
AMERICAN SOCIETY OF PLANNING OFFICIALS. Annual Planning Conference (Sheraton Palace). Exec. Dir., Dennis O'Harrow, 1313 E. 60th St., Chicago 37, Ill.

***March 18-20—Little Rock, Ark.**
ARKANSAS WATER AND SEWAGE CONFERENCE. Annual Meeting (Marion Hotel). Exec. Sec., C. W. Oxford, Associate Professor Chemical Engineering, University of Arkansas, Fayetteville, Ark.

***March 20-22—Baton Rouge, La.**
ANNUAL SHORT COURSE FOR WATER AND SEWAGE PERSONNEL. (Pleasant Hall, Louisiana State University). Exec. Sec., George H. West, Water Plant Superintendent, Box 15, Lake Charles, La.

**March 20-22—Chicago, Ill.**
AMERICAN WATER WORKS ASSOCIATION—Illinois Section. Annual Meeting (LaSalle Hotel). Sec.-Treas., D. W. Johnson, 122 S. Michigan Ave., Chicago, Ill.

**March 21-23—Chicago, Ill.**
AMERICAN SOCIETY FOR PUBLIC ADMINISTRATION. Annual Conference (Hotel Sherman). Sec.-Treas., Miss Laverne Burchfield, 1313 E. 60th St., Chicago 37, Ill.

***April 4-5—Pullman, Wash.**
PACIFIC NORTHWEST INDUSTRIAL WASTE CONFERENCE. Annual Conference (State College of Washington). For information, write to the Technical Extension Services, State College of Washington, Pullman, Wash.

***April 4-6—Mesa, Ariz.**
AMERICAN WATER WORKS ASSOCIATION—Arizona Section. Annual Meeting (Maricopa Inn). Sec., H. C. Bigglestone, District Engineer, Board of Fire Underwriters, 403 Luhrs Tower, Phoenix, Ariz.

**April 5-6—Great Falls, Mont.**
AMERICAN WATER WORKS ASSOCIATION—Montana Section. Annual Meeting (Rainbow Hotel). Sec.-Treas., A. W. Clarkson, Division of Environmental Sanitation, State Board of Health, Helena, Mont.

***April 10-12—Elmira, N. Y.**
AMERICAN WATER WORKS ASSOCIATION—New York Section. Spring Meeting (Mark Twain Hotel). Sec., Kimball Blanchard, Rensselaer Valve Co., c/o Ludlow Valve Co., 11 West 42nd St., N. Y.

***April 10-12—Wichita, Kans.**
AMERICAN WATER WORKS ASSOCIATION—Kansas Section. Annual Meeting (Broadview Hotel). Sec., Harry W. Badley, Neptune Meter Co., 119 W. Cloud St., Salina, Kans.

***April 22-25—Lafayette, Ind.**
FORTY THIRD ANNUAL ROAD SCHOOL. (Union Bldg., Purdue University). Exec. Sec., Ben H. Petty, Professor of Highway Engineering, CE Bldg., Purdue University, Lafayette, Ind.

***April 24-26—Lincoln, Nebr.**
AMERICAN WATER WORKS ASSOCIATION—Nebraska Section. Annual Meeting (Cornhusker Hotel). Sec.-Treas., John E. Olsson, 408 Sharp Bldg., Lincoln, Nebr.

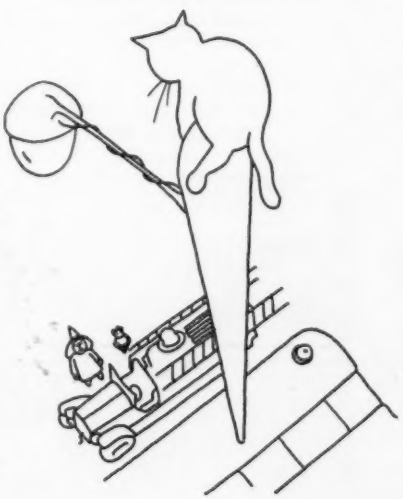
***May 2-4—Tacoma, Wash.**
AMERICAN WATER WORKS ASSOCIATION—Pacific Northwest Section. Annual Meeting (Winthrop Hotel). Sec., Fred D. Jones, Asst. Superintendent Water Department, Room 306, City Hall, Spokane, Wash.

***May 12-17—Atlantic City, N. J.**
AMERICAN WATER WORKS ASSOCIATION. Annual Conference (Convention Hall). Sec., Harry E. Jordan, 521 Fifth Ave., New York, N. Y.

***June 12-14—Bedford Springs, Pa.**
AMERICAN WATER WORKS ASSOCIATION—Pennsylvania Section. Annual Meeting (Bedford Springs Hotel). Sec., L. S. Morgan, Division Engineer, State Department of Health, Greensburg, Pa.

**June 12-19—The Hague, Netherlands**
CONGRESS OF THE INTERNATIONAL UNION OF LOCAL AUTHORITIES. For additional information address Herbert Eimmerich, American Committee for International Municipal Cooperation, 1313 E. 60th St., Chicago 37, Ill.

***October 7-10—Boston, Mass.**
FEDERATION OF SEWAGE AND INDUSTRIAL WASTES ASSOCIATIONS. Annual Conference (Statler Hotel). Exec. Sec., Ralph E. Fuhrman, 4435 Wisconsin Ave. NW., Washington 16, D. C.



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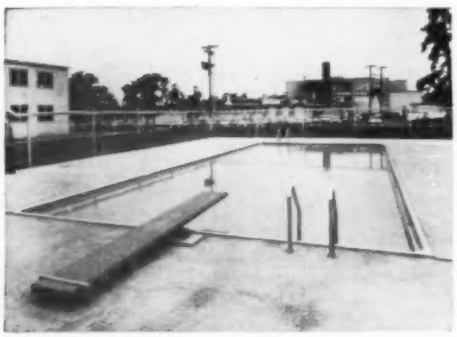

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# Recent City Manager Appointments

**Donald A. Duerr**
**Sausalito, Calif.**

**Frank Lawler**
**Bloomington, Minn.**

**F. R. Coop**
**Fremont, Calif.**

**Guy C. Larcom, Jr.**
**Ann Arbor, Mich.**

**Rollin K. Snethen**
**Colorado City, Texas**

LEONARD L. BISHOP, JR., city manager of South Miami, Fla., is the first city manager of Elm Grove, Wis.

ALBERT H. BRANEA, former deputy clerk and deputy water clerk, was recently appointed city manager of Lodi, N. J., to succeed Harold J. Hilliard, Jr.

RICHARD BROWN, administrative assistant at University City, Mo., was recently appointed city manager of Western Springs, Ill., succeeding George E. Smith.

BRUCE CANOVA, acting manager of Auburndale, Fla., since June was recently appointed city manager to succeed Joe N. Crowder.

LYELL C. CASH, assistant city manager of Oxnard, Calif., was appointed city manager of Ukiah, Calif., to succeed Charles A. Keene.

F. R. COOP, former manager of Inglewood, Calif., has been appointed first manager of Fremont, Calif.

RAYMOND S. COX, JR., lawyer from Washington, D. C., was recently appointed city manager of Princess Anne, Md., to succeed Arthur Emmerson.

DONALD E. CRANE, previous assistant at Lancaster, N. H., was recently appointed city manager of that city to succeed John T. McHugh.

R. W. CUNNINGHAM, former city engineer and water superintendent at Emporia, Kans., has been appointed city manager of his city.

WILLIAM B. CUNNINGHAM, water superintendent of Trinidad, Colo., is now city manager of that city, succeeding Eugene Aiello.

PHILLIP DAVIS, director of public works at South Norfolk, Va., was appointed city manager of Norton, Va., succeeding Norris F. Walker.

The first manager of Sausalito, Calif., is DONALD A. DUERR, formerly administrative assistant at Glendale, Calif.

E. C. DRUMB, city engineer of Denison, Texas, was recently appointed city manager of Alice, Texas, to succeed John L. Sullivan.

ADD ELLYSON, the former city manager of Atchison, Kans., for a year and a half, has been appointed city manager of Sapulpa, Okla., to succeed Glenn F. Varenhorst.

ARTHUR EMMERSON, former city manager of Princess Anne, Md., was recently appointed city manager of Ellwood City, Pa., to succeed Oscar A. Dahl.

RALPH F. W. EYE, city manager of Searsport, Maine, was appointed city manager of Bar Harbor, Maine, succeeding Donald E. Hobbs.

DUDLEY E. FOLEY, city manager for the past two-and-one-half years of Corinth, Maine, is now manager of Searsport, Maine, succeeding Ralph F. W. Eye.

J. FLOYD GLISSON, city manager of Fernandina Beach, Fla., was recently appointed manager of Jacksonville Beach, Fla., to succeed H. J. MacCotter.

IRA E. GUNN, JR., former manager of Reno, Nev., was recently appointed manager of Walnut Creek, Calif.

HUGH B. HALL, formerly branch manager of a dairy, was appointed city manager of Pikeville, Ky., last June, to succeed Jack Picklesimer.

DALE F. HELSEL, assistant manager of Bedford, Ohio, has been appointed the first manager of Bellefonte, Pa.

DENIS M. KELLEHER, engineering assistant to the city manager of Iowa City, Iowa, was appointed city manager of Placentia, Calif., to succeed William H. Cunningham.

L. F. KENGLE, city manager of Auburn, Calif., was appointed first city manager of Lincoln, Calif.

H. FRITZ LANHAM, administrative aide, Lubbock, Texas, was appointed city manager of Tulia, Texas, succeeding Hollis Cagle.

The first manager of Ann Arbor, Mich., is GUY C. LARCOM, JR., formerly consultant to the State of New Jersey Department of Conservation and Economic Development.

The first manager of Bloomington, Minn., is FRANK LAWLER, former manager of Newport, Kans.

WALTER I. LELAND, town manager of Manchester Center, Vt., for the past three years, has been appointed borough manager of Downingtown, Pa., to succeed Robert H. McKinney, Jr.

GAYLE T. MARTIN, city manager of Maywood, Ill., was recently appointed city manager of Manhattan Beach, Calif., to succeed Leland Swanson.

C. JAY MERCER, assistant city manager of Redlands, Calif., has been appointed manager of Laguna Beach, Calif., to succeed Benjamin H. Read.

BYRON MUNTZ OBERG was appointed city manager of Monticello, Utah.

BARKLEY G. OMANS, manager of Buchanan, Mich., for nearly five years, has been appointed manager of Albert Lea, Minn., to succeed R. L. Van Nocker, who recently retired.

O. LIONEL POMROY, a selectman in Detroit, Maine, for several years, has been appointed manager of Pittsfield, Maine, to succeed Allen Marks.

RALPH W. PRECIOUS, formerly assistant to the village manager of Glenview, Ill., has been appointed the first city manager of Oxford, Mich.

WILLIAM RICHARDS, manager of Arcadia, Calif., for almost five years, has been appointed manager of Garden Grove, Calif.

JOHN C. ROBERTSON, a staff assistant at the Michigan Municipal League, is now city manager of Northville, Mich.

CHARLES F. SCHWALM, city manager of Hamilton, Ohio, for more than six years, is the first manager of Burlingame, Calif.

R. B. SHERRILL, city manager of Lufkin, Texas, was recently appointed city manager of Richardson, Texas, the first city manager.

Roy Dozier is succeeded by ROLLIN K. SNETHEN, city engineer of Plainview, Texas, as city manager of Colorado City, Texas.

JAMES H. THOMPSON, a management intern at Wilmington, Mass., has been appointed city manager of South Berwick, Maine.

LEROY TRAFTON, in private business for the past year, has been appointed manager of LaCrosse, Kans., to succeed Ralph R. Johnson. He was formerly manager of Richfield, and Columbia Heights, Minn., and Sylvan Lake, Mich.

D. C. WESCHE, city engineer and director of service of Manhattan, Kans., has been appointed manager of that city.

A. J. WESTRICK has been appointed manager of Marine City, Mich., to succeed Paul D. Foxworthy. Mr. Westrick has held various positions with Marine City since 1940.

WILLIAM R. YERKES, city commissioner at Topeka, Kans., was appointed city manager of Atchison, Kansas, succeeding Add Ellyson.

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# All-round Dirt-Moving Team

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**ALLIS-CHALMERS**

# Legal Notes and Decisions

**Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS**
**Charles S. Rhyne, General Counsel**

### Airports—City May Not Change Rates In 20-Year Contract

Where a city had bound itself by a valid contract for municipal airport space, landing fees, facilities, etc., for 20 years, the action of the Public Utilities Commission of the City and County, purporting to abrogate the rates and charges under that contract, was void. *Trans World Airlines* v. *City and County of San Francisco*, 228 F.2d 473 (9th Cir., Dec. 19, 1955). (Cert den. U. S. Sup. Ct., see also 21 MJL 4, 35).

### Bonds For Recreational Purposes Properly Issued

In taxpayer's action to restrain a town board from issuing a capital note and serial bonds for money to buy real estate to be used for a recreational area, held, the issue complied with the statutory requirements. *Mitchell* v. *Town of Shelter Island*, 148 N.Y.S.2d 212 (Sup. Ct. Suffolk Cty., Dec. 15, 1955).

### City Employees' Workmen's Compensation May Be Recovered For Private Treatments

Where both employer and employee are completely unaware that traumatic incident arising out of and occurring in course of employment has initiated injury which later becomes disabling, held, employee may recover for cost of treatment he started and completed without notifying city employer. *Seimien* v. *Industrial Accident Commission of California and City of Pasadena*, 291 P.2d 951 (Cal. App., Dec. 29, 1955).

### City Government—Improper Enactment Procedure Invalidates Liquor Ordinance

Where minutes of meeting of City Commissioner of Panama City at which liquor zoning ordinance was adopted, recited presence of named members and recited that ordinance was adopted by a unanimous vote but manner of adoption did not satisfy charter requirement that the passage shall be taken by Yeas and Nays and entered on the journal, the ordinance was void. *Nelson* v. *State*, 83 So.2d 696 (Fla., Nov. 16, 1955).

### City Officer Without Tenure or Term Could Be Removed by Superior

Deputy registrar of vital statistics in City of Mount Vernon public health department had no definite term or tenure and could be removed at discretion and will of registrar. *Bornstein* v. *Freeman*, 147 N.Y.S.2d 599 (Sup. Ct. App. Div. 2nd Dept., Jan. 9, 1956).

### City Property—Lake in Which Boy Drowned Not Attractive Nuisance Under Pleadings

Where boy drowned in artificial lake filled and maintained by town, action based on attractive nuisance doctrine could not be sustained where complaint failed (1) to allege where, how, or under what conditions the boy fell into the lake and (2) to cite similar acts by children that could constitute notice to the town of such a nuisance. *Lovin* v. *Town of Hamlet*, 90 S.E.2d 760 (N.C., Jan. 13, 1956).

### Civil Defense—Statute Enforcing Rules Upheld

Evidence was sufficient to sustain conviction under State Defense Emergency Act provision making it a misdemeanor to violate or disobey any duly promulgated regulation or order concerning conduct of civilians and movement and cessation of pedestrian and vehicular traffic. *Hearn* v. *Parilli*, 147 N.Y.S.2d 618 (City Magistrate's Court of City of New York, Lower Manhattan District, Sept. 28, 1955).

### Condemnation—Abandonment of Suit Not Permitted Where New Bakery Built

Where housing authority instituted condemnation proceedings after offering $27,000 for bakery property and jury awarded $58,860 for the property, held, authority could not then dismiss the complaint in view of facts that bakery had built a new bakery elsewhere and authority had acquired and demolished property surrounding the bakery. *Piz* v. *Housing Authority of the City and County of Denver*, 289 P.2d 905 (Colo., Nov. 7, 1955).

### Condemnation—Closing of Street Not Compensable

In condemnation proceeding, damage from the closing of the street and diversion of traffic was not compensable, and there had been no waiver made of objections to production of testimony and evidence concerning such damage. Reversed in favor of city. *City of Dallas* v. *Hallum*, 285 S.W.2d 431 (Tex. Civ. App., Oct. 21, 1955).

### Contracts—Full Performance by Contractor Not a Bar to City's Plea of Illegality

Where city leased a spring under agreement to furnish water for plaintiff's house, held, when one contracts with city and such contract is void as a contracting away of legislative powers, city can properly plead its want of power despite fact of full performance on the part of the other contractor. *City of Warm Springs* v. *Bullock*, 91 S.E.2d 13 (Ga., Jan. 10, 1956).

### Police—Charges of Gross Neglect of Duty Supported by Proof of Mere Neglect of Duty, Denial of Due Process

Where policemen were charged with gross neglect of duty but were given penalties of romoval or suspension on proof of mere neglect of duty the proceedings constituted a denial of due process. *Simmerman* v. *City of Cleveland*, 130 N.E.2d 401 (Ohio App., Nov. 23, 1955).

### Sewage Disposal—Public Service Commission Has Right to Fix Rates

In petition by municipality for review of order by Public Service Commission fixing a rate to be paid by Village of Combined Locks for sewage disposal service after contract between city and village expires, held, judgment affirmed as commission had jurisdiction to establish the rate to be charged by the municipality. *City of Kaukauna* v. *Public Service Commission*, 74 N.W.2d 335 (Wisc., Jan. 10, 1956).

### Streets—Flare Pot Use Not Negligence Per Se

In action by six-year-old pedestrian against city for injuries suffered when he burned himself when passing by the open flame of a kerosene flare pot placed beside an excavation in the street, held, no cause of action alleged as negligence per se. *Conrad* v. *City of Takoma Park*, 118 A.2d 497 (Md., Dec. 2, 1955).

### Streets—Where Car Strikes Hole and is Thrown Against Pedestrian—City Liable

In action where pedestrian recovered from city for injuries sustained when car struck hole in street and thereby was thrown against the plaintiff, held, the factual questions involved were for jury. *City of Biloxi* v. *Armistead*, 84 So. 2d 431 (Miss., Jan. 9, 1956).

### Tax Foreclosure—Defendants Right To Redeem Denied

In action to foreclose tax sale certificates wherein the judgment was rendered for defendant who answered and counterclaimed, held, reversed as defendant had no such interest as would enable him to redeem. *Township of Teaneck* v. *Block* 427, 117 A.2d 465 (N. J., Oct. 24, 1955).

## *Zoning Commissioner "Qualifications"*

V. RAY GROBHOLZ, who is the secretary of Florida's South Peninsula Zoning District recently cast a reminiscent look over his past experiences as a public official in dealing with the complex problems of zoning. In doing so, Mr. Grobholz could not help pondering the question of the proper qualifications for a good zoning commissioner. Putting his experience to work, Mr. Grobholz recommends these qualifications in all budding zoning commissioners:

the curiosity of a kitten;
the tenacity of a bulldog;
the brashness of Charlie McCarthy;
the determination of a cab driver;
the diplomacy of a wayward husband;
the patience of a self-sacrificing wife;
the deductive powers of Sherlock Holmes;
the persuasiveness of a job-hunting politician;
the enthusiasm of a radio announcer;
the alertness of a fox terrier;
the self-assurance of a recent college graduate;
the persistence of a bill collector;
and the God-given gift to resist the constant demands of pressure groups.

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# Municipal and Civic Publications

**Publications on these pages are available from the addresses indicated in each listing and are usually free unless a price is given.**

## Zoning Tips for City Managers and Other Municipal Officials

TRENDS IN REVISING ZONING ORDINANCES—*Report No. 150, July* 1956. *Management Information Service, International City Managers' Association,* 1313 *East* 60*th St., Chicago* 37, *Ill.* 1956. 14 *pp. Available to subscribers of the Service only.*

Directed to the city official who wants to know what the most up-to-date trends in the preparation of zoning ordinances are, this publication discusses the factors in community growth that are guiding the revision of zoning ordinances. Drawing liberally on information from the American Society of Planning Officials, this report discusses zoning controls in unincorporated fringe areas, special zoning districts such as districts for garden apartments, shopping centers, industrial parks, etc. The report also discusses industrial performance standards, lot area and building bulk controls, transitional zoning, off-street parking and loading zoning provisions, zoning for motels and trailer camps, nonconforming uses, etc.

## Critique On Urban Design

URBAN DESIGN — *Progressive Architecture, Volume XXXVII, No. 8. August* 1956. *Reinhold Publishing Corporation,* 430 *Park Avenue, New York* 22, *N. Y.* $1.

This issue of *Progressive Architecture* features a series of discussions by leading architects and planners on contemporary trends in urban and redevelopment design. Articles contained in the section on Urban Design are:

REPORT OF HARVARD CONFERENCE, sponsored by faculty and alumni association f Harvard University Graduate School of Design in April. Subtitles include "Attitudes Toward Urban Design," "Forces That Are Shaping Cities Today," "Problems of Implementation," "Is Urban Design Possible Today?", and "Urban Designs of Today."

CRITIQUE: CANADA'S NEW TOWNS.

CRITIQUE: THE ARCHITECTURE OF REDEVELOPMENT IN U.S.A.

CRITIQUE: POST-WAR REBUILDING IN WESTERN EUROPE.

STREET LIGHTING IN ACTION.

## Population Study of Michigan Community

THE POPULATION OF KALAMAZOO COUNTY, MICHIGAN: ESTIMATES AS OF JULY 1, 1956 AND FORECASTS TO 1975—*Prepared by Harold C. Taylor, The W. E. Upjohn Institute for Community Research,* 709 *S. Westnedge Ave., Kalamazoo, Mich.* 1956. 22 *pp.*

Small municipalities considering making population estimates and forecasts of their own may wish to learn about this Kalamazoo study which illustrates two kinds of population study techniques suitable for modest communities. One is the "Component Method II," recommended by the Bureau of the Census as the most satisfactory method of estimating the population of small areas of the United States. The other is based on an analysis of residential building permits. The report brings population forecast to the year 1975, and includes a forecast for the area's college population.

## Data on Off-Street Parking Requirements

ZONING TO REQUIRE OFF-STREET PARKING FACILITIES FOR BUILDINGS—*Report No. 2908, New York State Conference of Mayors, Bureau of Municipal Information,* 6 *Elk St., Albany* 7, *N. Y.* 1956. 17 *pp.* $1.

This is a useful compilation of off-street parking requirements based on 20 city and 20 village zoning ordinances in New York State. Local officials considering the inclusion of parking standards in their own zoning ordinances will find this pamphlet very helpful.

## Financial and Accounting Procedures Discussed for Municipal Finance Personnel

PROCEEDINGS OF THE SECOND GOVERNMENTAL ACCOUNTING & FINANCE INSTITUTE, JULY 1956—*Institute of Public Affairs, the University of Texas, Austin, Texas.* 1956. 86 *pp.*

This institute was designed as a short course for municipal finance personnel and others interested in governmental accounting and financial procedures. The papers presented at the various sessions are reproduced in this booklet. Titles of some of the papers include "Municipal Debt—The Legal Side," "Municipal Debt—The Marketing Side," "Municipal Debt—The Administrative Side," "The Business Situation and Its Implications For Municipal Finance," "Service Charges As A Source Of Revenue," "Nonproperty Tax Revenues—The U. S. Picture," and "Licenses, Permits, and Miscellaneous Revenue Sources."

## Guide for Massachusetts Selectmen

HANDBOOK FOR MASSACHUSETTS SELECTMEN —*By Robert P. Boland, Bureau of Government Research, University of Massachusetts, Amherst, Mass.* 1956. 83 *pp.*

This handbook will be of primary interest to officials in New England towns. Selectmen in Massachusetts towns perform a variety of duties and functions imposed by state government and the town meeting and laid down in scattered statutes. This guide has assembled together the important provisions governing the responsibilities of selectmen. Part I deals with the general powers and duties of selectmen. Part II deals with the powers and duties of selectmen relative to public utility corporations, and Part III contains General Law citations concerning selectmen.

## Surveying

SURVEYING INSTRUMENTS AND METHODS—*By Philip Kissam. McGraw-Hill Book Co.,* 330 *W.* 42*nd St., New York* 36, *N. Y.* 482 *pp.* $5.75.

A text that covers virtually all the working problems that the normal surveyor will face. It is intended for the basic work and not for precise surveys. However, the text discusses the Wild T-2 optical-reading theodolite, the Zeiss Ni 2 self-leveling level, and has a special chapter devoted to aerial photography.

## Design Standards to Help City Engineers

ARCHITECTURAL GRAPHIC STANDARDS — *By Charles George Ramsey, A.I.A., and Harold Reeve Sleeper, F.A.I.A. John Wiley & Sons, Inc.,* 440 *Fourth Ave., New York* 16, *N. Y. Fifth Edition.* 1956. 758 *pp.* $18.50.

This fifth edition of Architectural Graphic Standards will primarily be of use to city engineers, and park and recreation officials who are concerned with the design of specific projects. Design standards defined in this book cover a variety of topics which apply to city departments. For example, the Sports and Games section include such subjects as playground equipment, court layouts for sports and games, and swimming pools, boating and beach equipment. The Landscaping and Site Work section provides standards for trees and shrubs, paving for paths, terraces, and roads, and park equipment and wood fences. Under the section on Area Requirements for Planning are such topics as space heights and sizes, seating for public assembly, etc.

## Baltimore's Urban Renewal Study Report

REPORT OF THE URBAN RENEWAL STUDY BOARD TO MAYOR THOMAS D'ALESANDRO, JR., BALTIMORE, MD.—*Baltimore Urban Renewal Study Board, Room* 502 *Court House, Baltimore* 2, *Md.* 1956. 99 *pp.*

In the field of urban renewal, the City of Baltimore has published this very significant report which takes complete stock of urban renewal activities in Baltimore and recommends extensive changes in the program, administration and organization. This report, prepared as a result of a special study ordered by Baltimore's Mayor, describes Baltimore's urban renewal problem in terms of its program and administrative organizations. Its fundamental recommendations deal with four major areas in the urban renewal process: (1) a comprehensive program dealing with physical planning and reconstruction; (2) a program for citizen participation; (3) financing the urban renewal program, and (4) organization and administration, including recommendations for a new renewal and housing agency, reorganization of city planning functions.

## Conservation Booklet for Citizens

THE CHICAGO CONSERVATION PROGRAM—*Prepared by the Community Conservation Board of Chicago,* 69 *West Washington St., Room* 504, *Chicago* 2, *Ill.* 1956. 36 *pp.*

This is a well-presented booklet issued by the Chicago Community Conservation Board to tell the average citizen about the Chicago Conservation Program. It summarizes the chief weapons and tools used in the city's conservation program. It explains the fundamental procedures governing the different types of programs (federally assisted, federally nonassisted, self-helping, FHA loans) and the benefits of community conservation. The second section of the booklet contains a series of questions and answers which provide information on the financing, administrative and organizational, and legal aspects of the program.

## Report on Chicago's Negro Community

CHICAGO'S NEGRO POPULATION: CHARACTERISTICS AND TRENDS—*Prepared for the Office of the Housing and Redevelopment Coordinator and the Chicago Plan Commission. By Otis and Beverly Duncan, Chicago Community Inventory, University of Chicago, Chicago, Ill.* 1956. 109 *pp.*

This study reports on the growth, characteristics and trends of the Negro community in Chicago. Statistical analyses compares the white population and the nonwhite population on population shift and distribution, employment status, education, family and household status, housing conditions and patterns of residential settlement, etc. This report is part of a longer study, titled "The Negro Population of Chicago."

## Planning for Los Angeles

ACCOMPLISHMENTS — 1955 — *Los Angeles City Planning Commission, City Hall, Los Angeles* 12, *Calif.* 1956. 48 *pp.*

Miles of new freeways, comprehensive beachfront development, and a metropolitan system of heliports are some of the plans recommended and outlined by the City Planning Commission for Los Angeles in its annual report. The report contains a concise summary of the Master Plan Restudy of the San Fernando Valley and describes the progress being made in the preparation of a series of master plans and programs for the city's development. These include an ambitious program of recreational facilities planned for the beachfront development, new subdivision design techniques, a comprehensive zoning ordinance, urban renewal projects, and 12 branch administrative centers.

## Report on Open Occupancy Trends in PHA Programs

TRENDS TOWARD OPEN OCCUPANCY IN HOUSING PROGRAMS OF THE PUBLIC HOUSING ADMINISTRATION—*Prepared by Office of Special Assistant to the Commissioner (Racial Relations), Public Housing Administration, Housing and Home Finance Agency, Washington* 25, *D. C.* 1956. 52 *pp.*

The fifth issue of this directory shows state and locality trends toward open occupancy in occupied low-rent housing projects. It lists states and localities which have (1) occupied low-rent projects, and (2) either open occupancy laws, policies or directives, or one or more integrated projects. This booklet shows as of March 1956 the pattern of Negro occupancy since 1953, and compares the trends with the total low-rent housing program. Trends are tabulated by locality; project; number of units; patterns (for example, segregated, integrated, etc.); types of program (Local Housing Authority, U. S. Housing Act, etc.); and occupancy policy statements.

## Techniques of Subdivision Control Reviewed for City Managers

MUNICIPAL REGULATION OF SUBDIVISIONS—*Report 151, August* 1956. *Management Information Service, International City Managers' Association,* 1313 *East* 60*th Street, Chicago* 37, *Ill.* 1956. 11 *pp. Available to subscribers of the Service only.*

Officials in rapidly growing communities will find this publication valuable in answering such questions as (1) what is the purpose of and authority for municipal control of land subdivision, (2) to what extent does this control extend to developments outside the city, (3) what are the desirable requirements of subdivision design and provision of utilities and community facilities, and (4) how can cities keep pace with development in providing facilities not required of the developer. Examples of subdivision requirements from communities throughout the country are presented, and some of the most up-to-date techniques are analyzed and discussed.

## Planning Recreation for A Five-County Area

THE HURON-CLINTON METROPOLITAN AUTHORITY—*The Seventh Biennial Report of the Board of Commissioners as of December* 31, 1955. 1750 *Guardian Bldg., Detroit* 26, *Mich.* 1956. 53 *pp.*

The Huron-Clinton Metropolitan Authority is perhaps one of the first public agencies to have assumed the task of recreational planning on a regional basis. Established in 1942 by a State Enabling Act, it is specifically charged to provide "parks, connecting drives, and/or limited access highways" for the use of some three and one-half million people in the five county area (Livingston, Macomb, Oakland, Washtenaw and Wayne) surrounding Detroit. Under the direction of a Board of Commissioners, the Authority is charged with all phases of planning, park and parkway construction, operation and maintenance, all designed to provide a well-balanced recreational program in all sections. This report records in photographs and text the accomplishment of the first 14 years and describes the various types of recreational facilities available at each of the five metropolitan parks.


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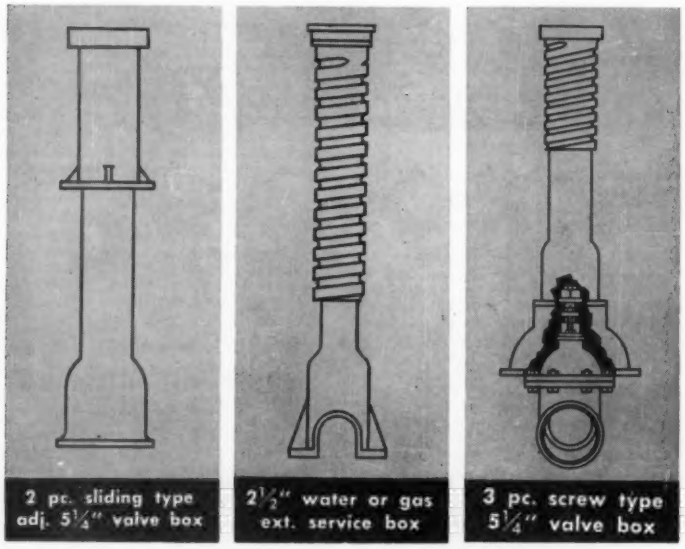

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## Par-3 Golf Course

GOLF OPERATORS' HANDBOOK—*National Golf Foundation, Inc., 407 South Dearborn St., Chicago 5, Ill. 105 pp.*

Not only the new Par-3 golf courses, but also driving ranges and miniature putting courses are discussed in this book. The text analyzes the present planning procedures, building and operating methods. The book will undoubtedly be of guidance to park superintendents who are exploring ways of enlarging activities in park and playground areas.

## Other Reports Received

### *Administration and Government*

TEXAS—Guide to Texas State Agencies. Prepared by the Institute of Public Affairs, The University of Texas, Austin, Texas. $1.50.

### *Air Pollution*

ALLEGHENY COUNTY, PA.—Report of Activities for the year ending May 31, 1956. Prepared by the Bureau of Smoke Control.

NEW YORK CITY, N. Y.—1955 Annual Report of the Department of Air Pollution Control.

### *Industry and the Community*

CALVERT CITY, KY.—Industrial Resources. Prepared by the Joint Civic Industrial Committee of Calvert City and the Department of Economic Development, Frankfort, Ky., August 1956.

HODGENVILLE, KY. — Industrial Resources. Prepared by Hodgenville Junior Chamber of Commerce and Department of Economic Development, Frankfort, Ky., May 1956.

### *Personnel*

GENERAL—Job Opportunities in State and Local Government (With Special Reference to the Pacific Coast States). Prepared by the Bureau of Governmental Research and Services, University of Washington, Seattle, Wash., September 1956. $1.

### *Public Health*

CUYAHOGA COUNTY, CLEVELAND, OHIO—1955 Annual Report of the County Welfare Department.

DAYTON, OHIO—Bulletin of the Division of Health. Prepared by the Department of Public Welfare, September 1956.

### *Street Construction & Maintenance*

OAKLAND, CALIF.—Annual Report for the fiscal year ending June 30, 1956. Prepared by the Street and Engineering Department.

### *Traffic*

GENERAL—Proceedings of the Eighth California Street and Highway Conference, January 25-27. Prepared by the Institute of Transportation and Traffic Engineering, University of California, Berkeley, Calif., 1956.

### *Urban Renewal & Redevelopment*

NEW YORK CITY, N. Y.—Park Row Slum Clearance Plan. Prepared by the Committee on Slum Clearance, October 1956.

WASHINGTON, D. C.—1956 Annual Report of the District of Columbia Redevelopment Land Agency, Washington, D. C.

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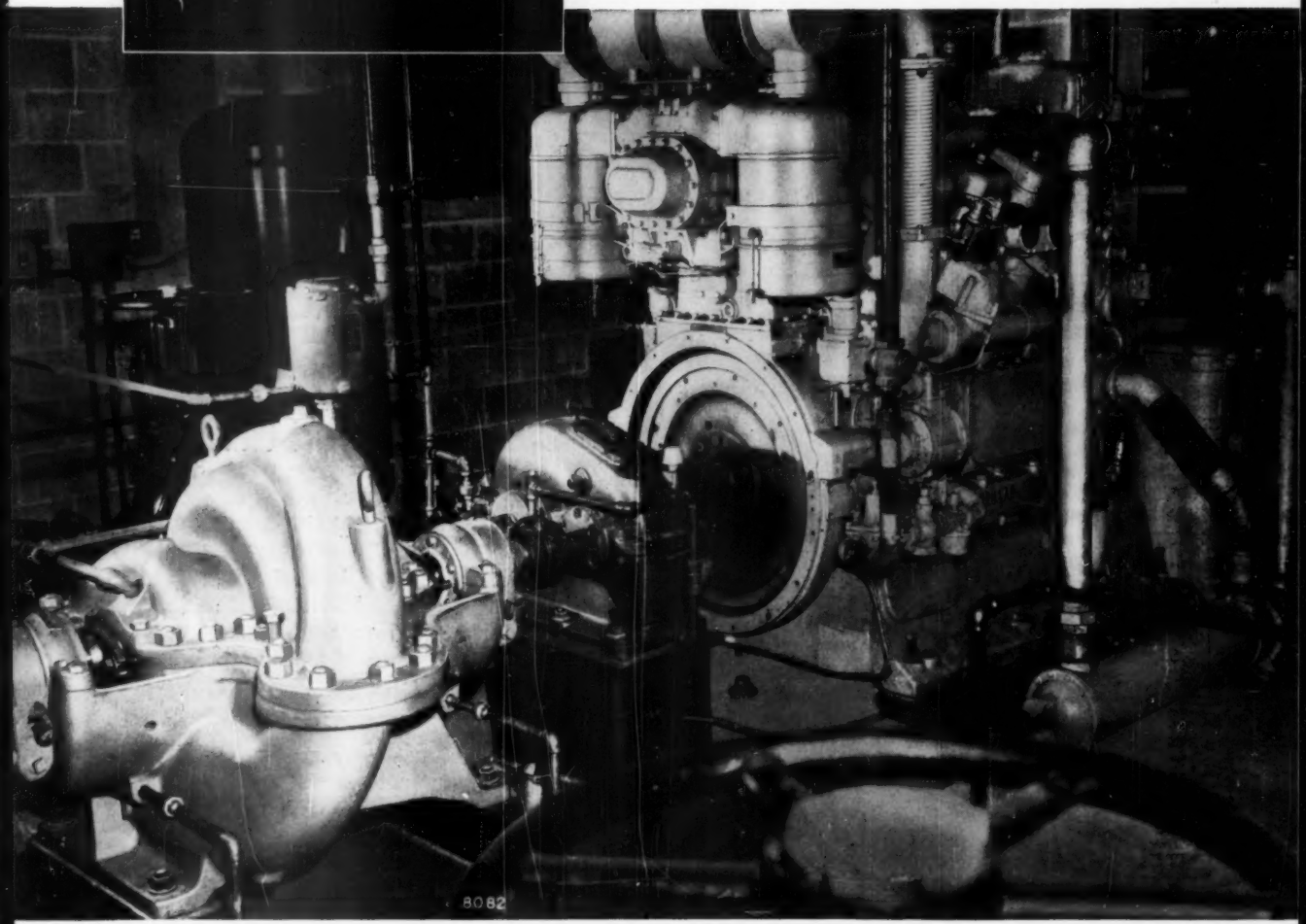


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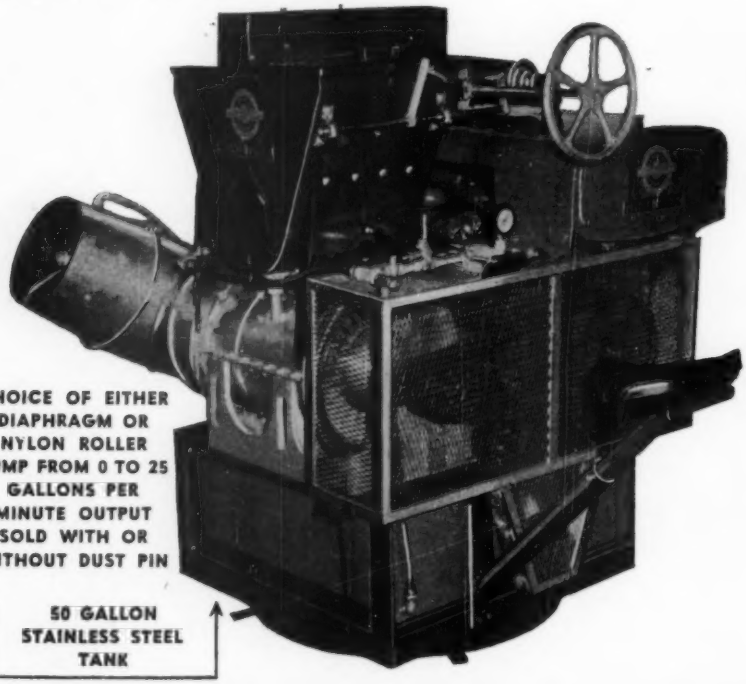

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| *U. S. Dept. of Plant Ind. | State of South Carolina |
| *U. S. Public Health Ser. | State of Massachusetts |
| *State of Ohio | *Dade County, Florida |
| *State of New York | East Volusia County, Fla. |
| State of California | Manatee County, Florida |
| Okaloosa County, Fla. | *City of Nashville, Tenn. |
| Bay County, Florida | City of Buffalo, N. Y. |
| Chester County, S. C. | City of Rochester, N. Y. |
| DeKalb County, Georgia | City of Richmond, Va. |
| Barwell County, N. C. | City of Gloucester, Mass. |
| *City of Atalnta, Ga. | City of Abilene, Kansas |
| *City of New Orleans, La. | City of Lakeland, Florida |
| *City of Columbia, S. C. | City of Toledo, Ohio |
| *City of Wilmington, N. C. | South Cook County, Ill. |
| *City of Washington, D. C. | City of Chicago, Ill. |
| *City of Galveston, Texas | City of Dearborn, Mich. |

*Denotes More Than One Piece of Equipment

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TRAINED FACTORY REPRESENTATIVES WILL ASSIST YOU WITH YOUR PROBLEMS WITHOUT COST OR OBLIGATION.

INCLUDE A BUFFALO TURBINE IN YOUR BUDGET FOR '57.

**BUFFALO TURBINE**

*Agricultural Equipment Co., Inc.*

**GOWANDA** **NEW YORK, U. S. A.**

# Purchasing News

**Information for officials interested in equipment and services for the construction, operation and maintenance of municipal utilities**

## Passing the Tests

As a kick-off for National Fire Prevention Week in Lansing, Mich. recently, several hundred safety-minded persons gathered to witness a special Underwriter's test of a newly completed 750-gpm John Bean pumping engine on the south bank of the Grand River. Built on a Reo fire truck chassis, it performed well over the Underwriter's requirements for "class A" equipment. The new unit pumped over 1,000 gallons of water per minute on the final "spurt" test.

A detailed description of the new pumping engine may be obtained from the JOHN BEAN DIVISION, FOOD MACHINERY & CHEMICAL CORP., LANSING, MICH. Write directly, or you may use the Post Card on the insert following Page 50. Circle No. 942.

**Shown beside the new fire truck are (left to right): George Moffatt, fire equipment engineer for John Bean Div.; J. L. Adams, vice-president of Reo Motors; A. G. Reiser and Andy Anderson, Lansing (Mich.) Township fire commissioners; Tracy Carrigan, John Bean Division manager; C. Bart Tenny, a member of the fire prevention committee of the Lansing Chamber of Commerce; Raymond Warren, fire chief for Lansing Township; and Charles Decker, Lansing fire chief. Not shown but present at the testing grounds was E. J. Noyce, sales manager for the John Bean Division.**

## New Motor Grader

Especially suited to tough banksloping, ditching and heavy grading operations, this new Adams Power-Flow 660 grader combines a 190-hp diesel power plant with a single-stage torque converter and four range constant mesh transmission. The new unit boasts a 27% increase in engine power over the standard Model "660." It is fast, easy to handle, and permits the operator to make changes in travel from forward to reverse and back, without hand shifting.

**New Power-Flow 660 grader is equipped with a 190-hp engine and torque converter which smooths out varying load shock and delivers positive power.**

The torque converter—constant mesh transmission combination of the Power-Flow 660 provides four forward speed ranges from a creeping .23 mph to 27.4 mph. The instant reverse provides an equal number of ranges from .22 mph to 24.4 mph. Engine options for the new grader are either a Cummins HRFBI 600 or a GM 6-71.

In addition to difficult grading jobs, the Power-Flow may be used wherever there are alternate light and heavy loads on the blade. It is easily maneuvered in traffic, and travels quickly from one job to another.

Further information on the Power-Flow 660 or any of the other models in the Adams line of 60- to 150-hp motor graders may be obtained from the LETOURNEAU-WESTINGHOUSE CO., PEORIA, ILL. Write directly, or you may use the Post Card on the insert following Page 50. Circle No. 975.

## For Better Fire Hose

Points to look for before buying fire hose, are discussed in literature from HEWITT-ROBINS, INC., STAMFORD, CONN. The company stresses the importance of choosing a strong jacket with sufficient burst resistance, and a rubber tube that can remain flattened for long periods without damage. In the hose jacket, circular weave is desirable, since the threads that spiral around the tube provide high burst-strength. For high-working pressures and frequent use, use double-jacket hose. Be sure to get a hose with minimum elongation under pressure, advises Hewitt-Robins. The more the hose stretches, the weaker it gets.

A stronger jacket, says the company, is obtained by the use of Dacron for the filler cords. Cotton warp cords protect the filler cords and provide the necessary resistance to abrasion. With Dacron filler double-jacket fire hose you get high working pressures, guaranteeing 600 or 400 pounds test pressure on delivery.

A new *Municipal Fire Hose Bulletin, M200,* may be obtained by writing directly to the manufacturer, or you may use the Post Card on the insert following Page 50. Circle No. 971.

## New Plastic Sewer Pipe

A plastic sewer pipe unaffected by most acids and alkalies and not subject to rust or electrolytic corrosion is introduced by the Southwestern Plastic Pipe Co., Mineral Wells, Texas. New Chem-Weld is strong, lightweight, and completely root-proof. The water-tight joints are quickly made by a chemical cement that joins the pipe to the fitting.

Standard lengths of Chem-Weld are 10 feet, and 20- and 30-foot lengths of pipe are available on order. These longer lengths cut installation time and strengthen the line. The pipe is available in 2-, 3-, 4-, 5- and 6-inch diameters.

A new catalog describing Chem-Weld may be obtained from SOUTHWESTERN PLASTIC PIPE CO., P. O. BOX 117, MINERAL WELLS, TEX. Write directly, or you may use the Post Card on the insert following Page 50. Circle No. 966.

# STEEL

**Every Kind**

**Quick Delivery**

**Plates, Structurals, Bars, Sheets, Tubes, etc. Carbon, Alloy, Stainless Steels, Babbitt Metal.**

# RYERSON

Joseph T. Ryerson & Son, Inc. Plants at: New York, Boston, Wallingford, Conn., Philadelphia, Charlotte, N. C., Cincinnati, Cleveland, Detroit, Pittsburgh, Buffalo, Chicago, Milwaukee, St. Louis, Los Angeles, San Francisco, Spokane, Seattle.


## *Purchasing News*

### Binds Reports, Records, Documents

Cities interested in a fast, low-cost method of binding reports, records and important legal documents, are offered the Power-A-Matic, a portable unit that punches rectangular holes in the sheets of paper to be bound. The new electric punching machine will work with any of the plastic binding equipment or metal loose-leaf folders made by the General Binding Corp. It requires only 1¼ feet of space, and can be operated on any desk or table top.

The Power-A-Matic is equipped with a ⅓-hp, 115-230V, single phase, 60-second electric motor with automatic overload protection. It has a punching area of 12 inches. According to the manufacturer, the unit will punch more sheets per lift, more lifts per minute, and more sheets per hour than ordinary punching machines.

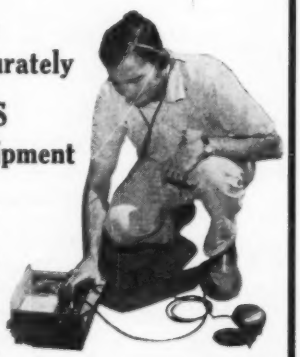
A more detailed description of the Power-A-Matic electric punch is contained in literature from the GENERAL BINDING CORP., 812 W. BELMONT AVE., CHICAGO 14, ILL. Write directly, or you may use the Post Card on the insert following Page 50. Circle No. 944.

### Makes Unloading of Refuse Fast and Easy

Fast unloading of refuse at the dump is possible with the addition of this new, quick-opening, lever-operated tailgate latching mechanism to any Hydro E-Z Pack refuse collection body. The latching mechanism is controlled by a folding hand lever located at the left side of the body. When the lever is moved, it releases six heavy-duty toggle locking latches at the tailgate and frees it for dis-


## New, Transistorized Leak Detector by Fisher!

- **finds water leaks faster, more accurately**
- **weighs 80% LESS than ordinary equipment**



Famous Fisher M-Scope Leak Detector is now transistorized which permits great, new power increase; compact, lightweight unit now weighs just 7 lbs. compared to 35 lbs. for ordinary models; eliminates bulky batteries and tubes with use of 5 tiny transistors. (M-Scope batteries now last twice as long.) Includes durable leather case, large, easy-to-read meter, built-in battery tester, all accessories. **$275.00**

**Send for Free Manual**
"Special Pipe Finding and Leak Detecting Techniques"

**Free 1956 Catalog**

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Research Laboratory, Inc.
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then roll, haul or truck to any other spots needing full traffic signal protection.

Write us at once for installations and complete specifications.

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146 West 21st St. Los Angeles 7, Calif.

charging the load. The tailgate, hung on new offset hinges, closes completely when the body is emptied.

According to the manufacturer the new mechanism maintains positive, watertight sealing of the tailgate at all times. Individual latches are backed by heavy stops welded to the body structure. This prevents tailgate distortion and transfers packing pressure stresses uniformly throughout the body structure.

Hydro E-Z Pack refuse collection bodies complete with the new latching mechanism, are fully described in *Catalog LL-3509* from HYDRO E-Z PACK CO., GALION, OHIO. Write directly, or you may use the Post Card on the insert following Page 50. Circle No. 956.

## Canadian Firm to Make Wayne Street Sweepers

The organization of a Canadian company to manufacture and sell a complete line of power sweepers, is announced by the Wayne Mfg. Co., 1219 E. Lexington St., Pomona, Calif. The new corporation, Wayne-Crothers, Ltd., Toronto, is licensed to manufacture both Wayne street and industrial sweepers. First production is scheduled for January 1957.

The new Canadian firm was organized by Wayne Mfg. and Crothers Mfg., Ltd., Toronto. It is headed by Francis J. Crothers, president. Members of the board of directors include Charles M. Weinberg, president of Wayne, and Gil M. Wayne, executive vice-president of the California firm.

## Cities Give Impetus to Clean-Up Campaigns

Municipal governments are becoming more and more clean-up conscious, according to the Wheeling Corrugating Co., Wheeling, W. Va. During 1955-56, this major supplier of galvanized and painted refuse receptacles saw orders placed by 19 cities and towns for expanded metal containers. The number of baskets ordered ranged from 13,000 by Chicago, Ill., to five for Bristol, Va. New York ordered an additional 1,100 containers and was followed by Louisville, Pittsburgh and Detroit.

Wheeling waste receptacles are 24 inches wide at the top, 19 inches wide at the bottom, 34 inches high, and weigh 38 pounds. They combine ease of handling with the strength to withstand dropping and knocking. Holes in the bottom pans of containers permit drainage and ventilation.


**Self-propelled BANTAM cuts trenching time in HALF for City of Jackson, Michigan Water Dept.**

**"easily completes 8-9 service installations a day!"**
**Says Water Works Supt. Joe Rogevin**

Water Works Superintendent Joe Rogevin of the fast-growing city of Jackson, Michigan, has this to say about their new BANTAM Self-Propelled Model CR-35:

**on speed!** "In a single 8-hour working day! Our BANTAM can easily complete 8-9 service installations 33′ long x 9′ deep in one working day in a 3-block area—including travel time from the water department . . . job-to-job moves . . . and return travel.

**on costs!** "With the one-man operation of the CR-35, we cut our trenching time in half over previous methods—with no lost time for repositioning moves.

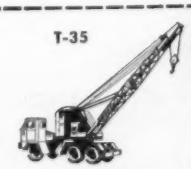
**on versatility!** "BANTAM is used for digging of service lines from houses to main lines . . . for maintenance at water plant . . . setting power poles—for virtually every municipal lifting and digging job."

**on ideal size!** BANTAM is just the thing for municipal operations, according to Mr. Rogevin—giving these additional advantages: "It has 'just right' travel speed . . . the handy size for traveling busy city streets and working in tight spots. We pull right up to the curb, park parallel and complete trenching jobs for most service installations without leaving the street . . . without tying up traffic."

The new, versatile BANTAM Self-Propelled is the most productive traveling one-man rig at the lowest price in its class. Lifts up to 12,000 lbs. . . . digs up to 100 cu. yds. per hour. Write for complete details.

TRY THIS MONEY-, TIME-SAVING BANTAM — SEE YOUR BANTAM DISTRIBUTOR!

T-35



C-35

SCHIELD Bantam Co.

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Waverly, Iowa, U.S.A.

AC-94

Send illustrated BANTAM Self-Propelled folder. Also details on
☐ Carrier Mounted ☐ Crawler Mounted

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Position.....
Company.....
Address.....
City.....State.....

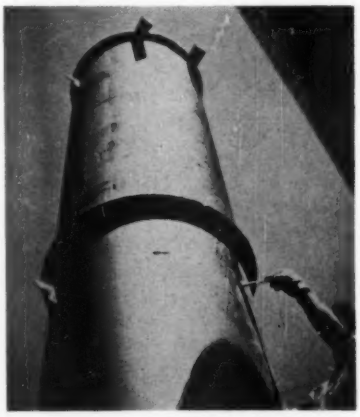
WORLD'S LARGEST PRODUCER OF TRUCK CRANES AND EXCAVATORS

## Protects Water, Sewage Equipment

Used in tanks, piping, sewage ejectors, underground pumping stations and settling basins, "Versapox" coating protects equipment against the damaging effects of water, sewage, fumes, acids, alkalies, sand, grit and rocks. The new protective coating was developed by Smith & Loveless, Inc., in cooperation with the Shell Chemical Co., Union Carbide & Carbon Co., General Mills and others. It will adhere to most nonwaxy surfaces and is a good sealant for application to concrete, glass, wood, steel, and plastic.

According to Smith & Loveless, Inc., "Versapox" was originally compounded for use in lining the company's steel sewage ejectors, and has been proven in many uses such as jet planes and metal cooling towers. The coating, reports the manufacturer, is not affected by temperatures ranging from sub-zero to well above 600° F.

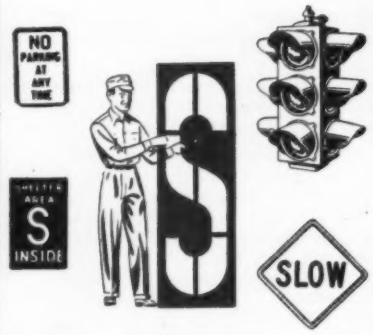
A more detailed description of "Versapox" may be obtained from SMITH & LOVELESS, INC., DEPT. 10, P. O. BOX 8172, KANSAS CITY, MO. Write directly, or you may use the Post Card on the insert following Page 50. Circle No. 951.



**The entrance tube of an underground pumping station being coated with "Versapox," and the finished tube after fill and leveling.**


All from ONE Source!

SIGNS AND SUPPLIES for EVERY CITY

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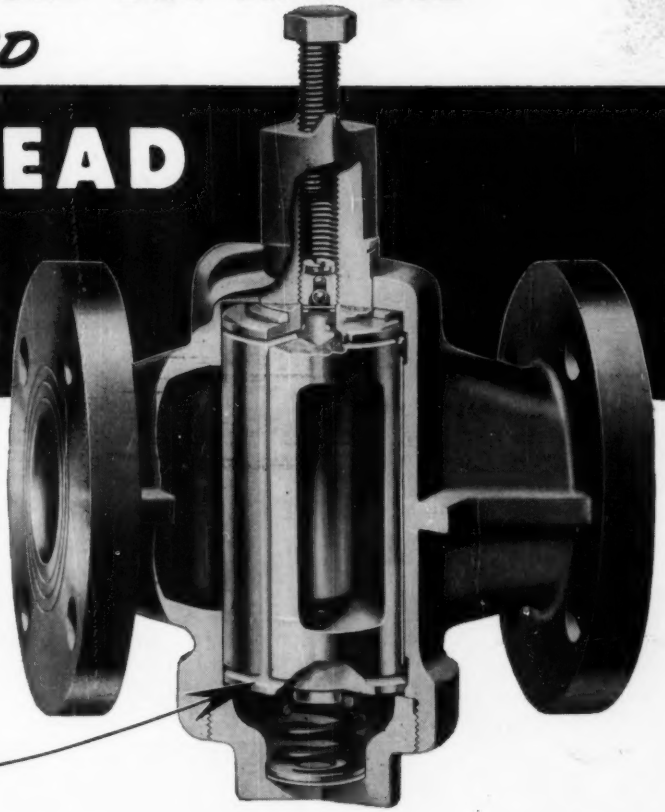
## Big Filtration Plant Goes Automatic

A robot monitoring system will oversee the operation of the largest of Philadelphia's five water purifying systems, according to City Water Commissioner Samuel S. Baxter. The $500,000 pneumatic-electronic control system will automatically adjust the amount of water being filtered or purified to meet the city's normal fluctuating demands. As demand rises, the system will automatically increase the amount of water being treated. When demand slackens, it will reduce the filtering rate.

The new pneumatic-electronic control system was designed by engineers from the Industrial Div., Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., in collaboration with the Pittsburgh (Pa.) engineering firm of Morris Knowles, Inc. It will enable the 3-acre Torresdale Plant to treat 420 millions of gallons of water daily, an increase of 88%.

# No. 5* of 12 REASONS WHY
## YOU SHOULD BUY AND USE
## *LOW-PRICED*
# HOMESTEAD
## *Lubricated*
## PLUG VALVES



***SELF-FREEING PLUG PREVENTS STICKING**

Homestead's exclusive completely controlled lubricant system positively prevents sticking by its instant, piston-like movement of the plug downward at the start of each lubrication. Spring and line pressure return it to stem-sealed position.

This is only **one reason why you should buy and use low-priced** HOMESTEAD LUBRICATED PLUG VALVES.

## HERE ARE ALL TWELVE

1. Extra long valve life assured by very close tolerance between sealing surfaces.
2. Straight line fluid flow—streamlined ports—minimum resistance to flow—minimum pressure drop.
3. Triple head seal—two lubricant rings and reinforced Teflon stem seal prevent leakage.
4. Easy turning—plug floated on Teflon washer and reinforced Teflon ring.
5. Self-freeing plug prevents sticking.
6. Full-threaded screw prevents dirt being forced into lubricant system.
7. Quarter-turn fully opens or closes.
8. Reinforced Teflon stem seal—no cold flow—continuous, positive seal.
9. Seating surfaces protected in both open and closed positions.
10. High pressure lubricant system provides full lubricant seal around ports.
11. Leak-proof double ball and lubricant sealed check valve. No springs. No maintenance.
12. Extruded Lubricant shows when system is full. No waste of lubricant.

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VALVE MANUFACTURING COMPANY
*"Serving Since 1892"*
**P. O. Box 46** **Coraopolis, Pa.**

**Without obligation, send Reference Book 39—Section 5 on HOMESTEAD LUBRICATED PLUG VALVES.**

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COMPANY_____

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get wide-open

spaces—with

Butler buildings

Why pay for building space you can't use? Poles, posts, columns, roof trusses—all these rob you of usable space. But there's no waste in Butler buildings.

Rigid frames span the entire width of Butler buildings. There are no posts to eat up storage space. No obstructions to get in the way of men or machines . . . nothing to interfere with the smooth flow of freight or the efficient arrangement of offices, assembly lines, cafeterias. Truss-free interiors permit storage right up into the roof peak, placement of lights, sprinkler systems, and other fixtures completely out of the way of floor traffic. For the whole story on Butler metal buildings, ask your Butler Builder.

Consult the yellow pages of your telephone directory for name of your Butler Builder, or write on your company letterhead for informative brochure.

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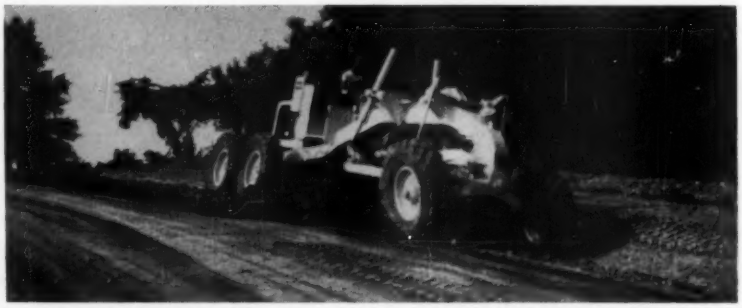
## New, Diesel-Powered Motor Graders



**A power sliding moldboard on the new grader operates hydraulically from the cab.**

Cummins diesel-powered units have been added to the Huber-Warco line of 6-D and 7-D series motor graders, according to the HUBER-WARCO CO., MARION, OHIO. Two models are available: the 6-D2, powered by a 125-hp JN-6-BI Cummins diesel; and the 7-D2, powered by a 150-hp JBIS-600 diesel. Both models feature Huber-Warco's combination of a torque converter and full power shift transmission.

Standard on both grader models is a power sliding moldboard, operated hydraulically from the cab. This special feature permits the operator to power-shift the moldboard out of the way as he approaches an obstacle, and then power-shift it back to its former position. Complete hydraulic control of every working position is entirely governed from the cab.

Complete details on the 6-D2 and the 7-D2 may be obtained directly from the manufacturer, or you may use the Post Card on the insert following Page 50. Circle No. 963.

Automation Parking Pays Big Revenues

WRRS ELECTRIC PARKING GATES

*Eliminate Labor Costs—Easy to Operate*

Municipalities and parking operators find that Automation Parking with WRRS Gates pays big revenues. It results from low installation costs, practically no maintenance costs, and no labor costs—the biggest cost of parking lot operation. And it's a simple matter to make periodic collections at one or two coin boxes.

This is the answer to off-the-street parking problems. WRRS Gates operate with Remote Controls, using coins, tokens, keys, or any combination of these methods. WRRS Gates are safe, function in all types of weather, and are built to last 20 to 30 years.

Send us a diagram of your lot, and receive, without obligation, a parking plan and cost estimate.

MADE BY THE BUILDER OF 10,000 RAILROAD CROSSING GATES 5977

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# *it's* Moline

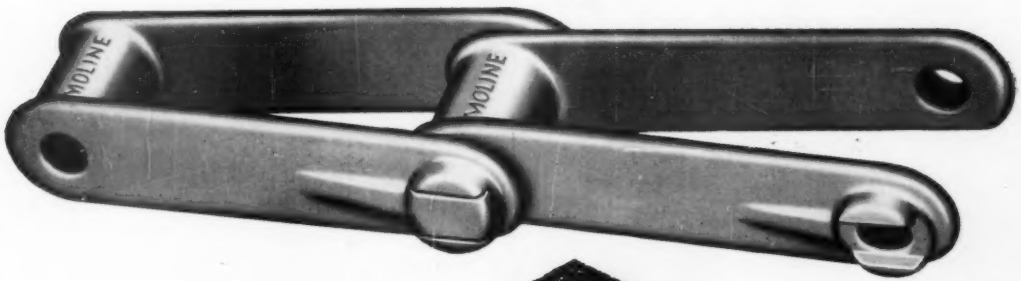
## *long pitch pintle chain for sewage treatment plants...*

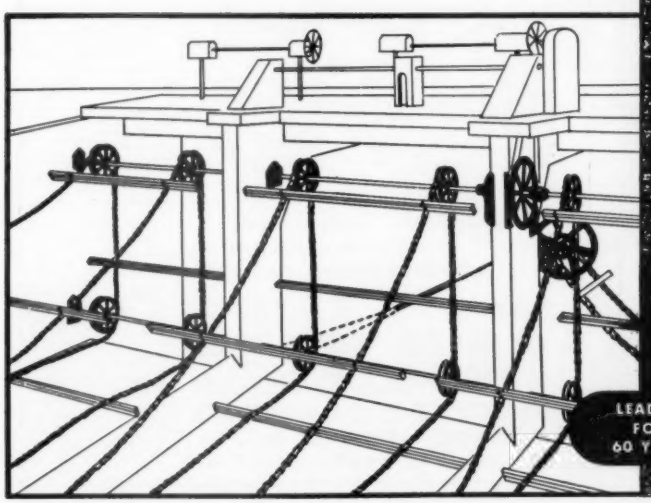
Extra strength with minimum weight is one reason why Moline Long Pitch Pintle Chain is so universally used in sewage treatment plants. It's assembled with forged "T" head pins and cotters.

Special analysis metals with improved corrosion resistance are made in this pattern.

Write for information and prices or phone your local Moline representative.

IN GRIT WASHERS, SLUDGE COLLECTORS, SCUM REMOVERS, SETTLING TANKS AND OTHER UNITS



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- **RUGGED, COMPACT, ACCURATE, CONVENIENT!**
- **GUARANTEED**—to function regardless of surface or ground cover.
- **15-DAY FREE TRIAL**—No money! No obligation! You be the judge!

*ORDER NOW—Wire or Call Collect for fastest delivery! PHONE: Kirby 1-4200*

**AQUA SURVEY & INSTRUMENT CO.**
2010 Leslie Ave., Cincinnati 12, Ohio

# *Purchasing News*

## New, Low-Cost Concrete Mixer

Latest addition to the Kwik-Mix line of concrete mixers is a low-cost, tilt-type unit, Model 3½-S, a light-weight, easily portable machine designed to meet all AGC specifications. Called the "Dandie Junior," the new mixer has a capacity rating of 3½ cubic feet of mixed materials plus 10% overload. It is powered by either a 2.2-hp air-cooled gasoline engine or an optional electric motor, with single V-belt power transmission.

The new "Dandie Junior" has a low 40-inch charging height and a 17-inch drum opening for fast, easy loading. A simple, hand-controlled tilting device is slotted to hold the drum in any position or to permit the operator to discharge the complete batch.

More detailed information on the Model 3½-S may be obtained from the KWIK-MIX CO., PORT WASHINGTON, WIS. Write directly, or you may use the Post Card on the insert following Page 50. Circle No. 946.

## Announce Merger

The recent merger of the Koehring Co., Milwaukee, Wis., with the Buffalo-Springfield Roller Co., Springfield, Ohio, is announced by Julien R. Steelman, president of Koehring, and Carl F. Greiner, president of Buffalo-Springfield. Hereafter, Buffalo-Springfield will be operated as the Buffalo-Springfield Roller Division of the Koehring Co.

The new merger, reports Mr. Steelman, brings together two of the oldest leading manufacturers of construction machinery. Koehring, a leading manufacturer of con-

**Star Performers on Important Duties**

**AURORA® Non-Clog Pumps, both Vertical and Horizontal have won high favor**

— for industrial by-products, semi-solids, wastes, municipal sewage plants, lift stations, buildings and all duties involving the handling of heavy liquids and liquids containing solids.

Type KGG Aurora Horizontal Non-Clog Pump

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THE NEW YORK AIR BRAKE COMPANY
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INTERNATIONAL SALES OFFICE, 90 WEST ST., NEW YORK 6, N. Y.

*Severe Winter Ahead**
. . . get your MAXIM
**SNOW THROWER NOW**

**3 MODELS** 4.6 to 8.2 HP

*DECEMBER FORECAST
1956 Old Farmer's Almanac
*Snow comes to stay, some places til May. Woolies tickle a mickle. Roads all glazed, with ice are paved. Excellent weather to lodge together. Bright and white, zero at night, cold winds bite.*

**3000 IN USE**
**DEALERS WORLDWIDE**
**A PROFESSIONAL MACHINE**

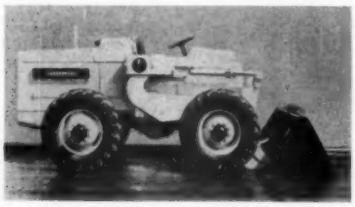
THE *Write for folder*
**MAXIM SILENCER COMPANY**
*Subsidiary of Emhart Manufacturing Co.*
85 Homestead Ave., Hartford, Conn.

crete finishing and paving equipment, concrete mixers, ditchers, excavating and hauling equipment will, for the first time, be a supplier of asphalt finishing machines, road rollers and soil compaction equipment, traditional Buffalo-Springfield products.

According to Mr. Greiner, he and his brother Edward E. Greiner, executive president of Buffalo-Springfield, will shortly retire. John F. Harrison, associated with the company since 1940 and currently vice-president and general manager, will continue in that capacity. No other changes in Buffalo-Springfield officers are contemplated.

## "Payloader" Gets Top Design Award

The Sixth Annual Industrial Design Institute Award was recently presented to Jon W. Hauser for his design work on the Model HH "Payloader," a product



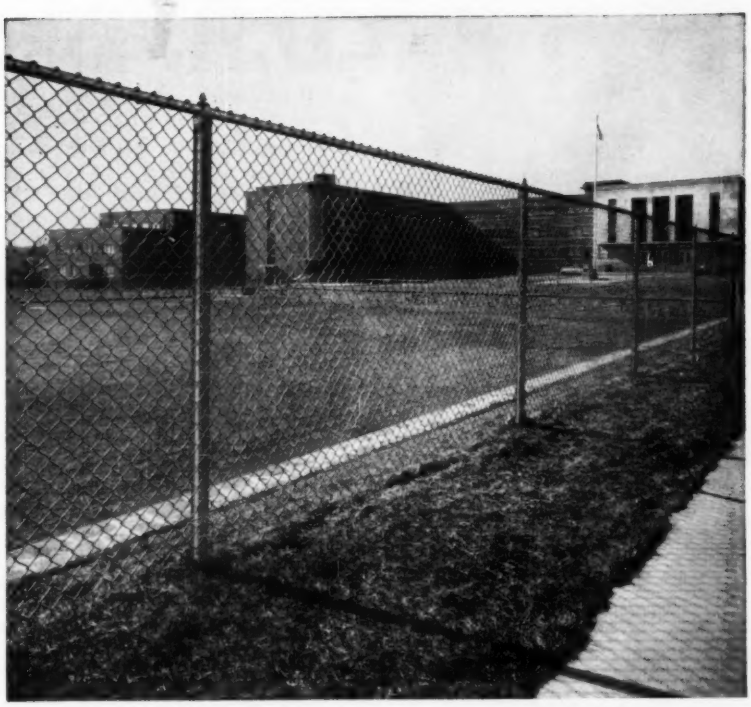
of The Frank G. Hough Co., 710 Sunnyside Ave., Libertyville, Ill. According to Walter C. Granville, chairman of the IDI Award Program, this is the first time that a piece of equipment of this type has ever been selected for design honors.

## Swimming Pool Pumps

A new line of self-priming centrifugal pumps for use with swimming pool filtering equipment is introduced by STA-RITE PRODUCTS, INC., DELAVAN, WIS. The pumps are available in ½-, ¾-, 1- and 1½-hp models, and are offered with packing gland or mechanical seal construction. They are easy to install and economical to maintain.

Every Sta-Rite pump is designed with a hair and lint strainer basket made of heavy gauge perforated bronze, and a bronze impeller. The capacitor type ball bearing motors have stainless steel shafts.

Additional details on the new swimming pool pumps may be obtained directly from the manufacturer, or you may use the Post Card on the insert following Page 50. Circle No. 968.

# Every school needs an Anchor Fence

Handsome Anchor Chain Link Fence provides safety and protection for both pupils and property. By day, Anchor keeps pupils safely inside—trespassers and unwanted animals stay out. At night, Anchor stands guard against vandals and intruders . . . helps preserve an orderly, well-kept appearance.

And this 24-hour protection is low-cost too. An Anchor Fence needs no annual painting or upkeep. Deep-driven anchors keep the fence erect and sturdy year after year in all kinds of weather and soil conditions.

**Insist on *GENUINE* Anchor Fence**

Look for the famous orange-and-black nameplate that means you're getting the finest chain link fence—the fence with the zinc coating applied *after* weaving, not *before*. For a free estimate or more information, call your local Anchor office or write: ANCHOR POST PRODUCTS, INC., *Fence Division*, 6912 Eastern Avenue, Baltimore 24, Maryland.

**Anchor Fence®**

Division of ANCHOR POST PRODUCTS, Inc.

*Plants in Baltimore, Md.; Houston, Texas; and Los Angeles, California*
*Sold direct from Factory Branches and Warehouses in all principal cities*

# A.R.B.A. ROAD SHOW AND CONVENTION

## *What you'll hear there!*

### THE ARBA CONVENTION

will open Monday morning, January 28, 1957, with suitable ceremonies. For five days you will have the opportunity of attending the greatest seminar on roads and road construction ever gathered together. Every effort has been made to secure people of importance and authority to talk to you on the critical subjects of the industry.

*You will hear:*

- Senator Albert Gore of Tennessee
  Chairman of the Senate Sub-Committee on Roads
- Senator Dennis Chavez of New Mexico
  Chairman of the Senate Committee on Public Works
- Rep. George H. Fallon of Maryland
  Author of the Highway Bill and
  Chairman of the House Sub-Committee on Roads
- Senator Francis Case of South Dakota
  Ranking minority member of the
  Senate Sub-Committee on Roads
- Rep. Charles Buckley of New York
  Chairman of the House Sub-Committee on Public Works
- Rep. J. Harry McGregor of Ohio
  Ranking minority member of the
  House Sub-Committeee on Roads

*—and many other well-known authorities on the Road situation.* These men have played a great part in the formation of the coming road program. No group knows the subject better.

Technical Sessions will begin Monday at 1:30 P.M. and *You will hear:*

- W. A. Warrick, Consulting Engineer of the John Clarkson Co. of Albany, N. Y.; and K. B. Woods, Head of the School of Civil Engineering, Purdue University. They are outstanding authorities on "The Design of Rigid Type Pavements."
- Fred F. Florence, President of the American Bankers Association (Republic National Bank of Dallas, Texas) will speak on "The Bankers' Part in the Accelerated Federal Aid Road Program."
- A. E. Johnson, Executive Secretary, American Assn. of State Highway Officials, Washington, D.C., talking on "State Financing of the Road Program."
- A. C. Clark, Deputy Commissioner, Engineering Div., U. S. Bureau of Public Roads. His address will be, "Engineering the Accelerated Road Program."
- George M. Foster, Chief Deputy Commissioner, Michigan State Highway Department, East Lansing, Michigan, will talk on "Building Roads with Modern Engineering Methods."

Other important subjects will be discussed by Nationally Known Experts.

- James W. Spencer, Highway Research and Extension Engineer, Department of Agricultural Engineering, Cornell University. President, Educational Div. of ARBA. He will discuss, "Keeping Highway Engineering Education Abreast of Modern Techniques."
- Fred Burggraf, Director, Highway Research Board, Washington, D. C., will give a report on "AASHO Illinois Test Road."
- J. E. Buchanan, President, The Asphalt Institute, University of Maryland, will give an address—"Bituminous Materials for Pavement Construction."
- C. Homer Cash, Road Engineer, Michigan State Highway Department, Lansing, Michigan, will talk about "Reinforcing Concrete Design Practice in Michigan."

There will be panel discussions on the many problems of the engineer and contractor. Photogrametry, electric computors, traffic problems, maintenance, bituminous pavement construction, stabilization, financing, illumination and related subjects will all be treated in detail.

This is just a small part of the total program. MAKE YOUR PLANS TO ALLOW SUITABLE TIME TO ATTEND THESE IMPORTANT SESSIONS.

**Jan. 28—Feb. 2, 1957**

**INTERNATIONAL AMPHITHEATRE**

# CHICAGO

## Warning Light Flashes Red or Amber

An improved traffic warning-flasher light that costs less than one cent a day to operate, is offered by the GEN-A-MATIC CORP., 14741 BESSEMER ST., VAN NUYS, CALIF. Available with a choice of red

or amber lenses, the light is said to offer 25% greater light intensity. It is equipped with two standard batteries, and will operate up to six months without battery replacement.

The new warning light is tamper-proof, moisture-proof and weather-proof, and will operate at any extremes of temperature. There are no high voltage wires to remove or handle when the battery is replaced, eliminating any danger of shock. The light can be safely used near explosive vapors and in other hazardous locations.

A more detailed description of the Gen-A-Matic 2-way traffic warning flasher light may be obtained directly from the manufacturer, or you may use the Post Card on the insert following Page 50. Circle No. 962.

## Pneumatic Scale Feeder for Water Plants

A gravimetric feeder that continuously controls the flow of alum, lime, soda ash and other dry, free flowing materials in water treatment plants, is offered by WALLACE & TIERNAN, INC., 25 MAIN ST., BELLEVILLE 9, N. J. Called the Merchen pneumatic scale feeder, it is especially adaptable for continuous blending or automatic batching operations, and may be used safely in hazardous locations.

The feeder is controlled by either a manually set 3 to 15 psi air signal, or in proportion to an automatic air signal from an external source. It maintains a constant delivery of material by weight at the "set" rate within ±1% accuracy over any one minute period.

Full information on the compact, easy-to-install Merchen pneumatic scale feeder may be obtained directly from the manufacturer, or you may use the Post Card on the insert following Page 50. Circle No. 967.

## New Rubber Tired Crane Lifts 15 Tons

Combining the husky power of a crane with the mobility of a truck, the new S-1510 crane provides cities with an ideal unit for picking up pipe, digging ditches, and materials handling operations. The new crane is designed to lift 15 tons at a 10-foot radius with a 30-foot boom. It is powered by either a gasoline or a diesel-electric engine.

Additional details on the S-1510 may be obtained from COLES CRANES, INC., JOLIET, ILL. Write directly, or you may use the Post Card on the insert following Page 50. Circle No. 955.

## New Youngstown Division

Recent acquisition of all of the properties and assets of the Emsco Mfg. Co., Los Angeles, Calif., is announced by the Youngstown Sheet and Tube Co., Youngstown, Ohio. Emsco will hereafter be known as the Emsco Mfg. Co., a division of The Youngstown Sheet and Tube Co. The Johnston Pump Co., formerly a division of Emsco, will also operate as a division of Youngstown.


THIS FREE BULLETIN shows you . . .

. . . HOW THIS NEW P-F Hydraulic RESCUE KIT . . .

. . . uses 7½ TONS of HYDRAULIC POWER to FREE TRAPPED VICTIMS FASTER!

*READ WHY* the P-F RESCUE KIT gives you all the power, speed and versatility for FAST, SURE RESCUE.

*READ HOW* the P-F 7½ Ton, Remote-Control Jack and All-Position Ram, Speedlok Tubing and Versatile Attachments, including the exclusive Bite-Tite Pull Clamps, Cleated Push Base and Spreader, fit all rescue situations.

Before purchasing any Rescue Equipment send for your FREE copy of this informative bulletin.

MAIL COUPON today!

H. K. PORTER, INC.
SOMERVILLE 43, MASS.

Please send me copy of Rescue Kit Bulletin

NAME_____

COMPANY_____

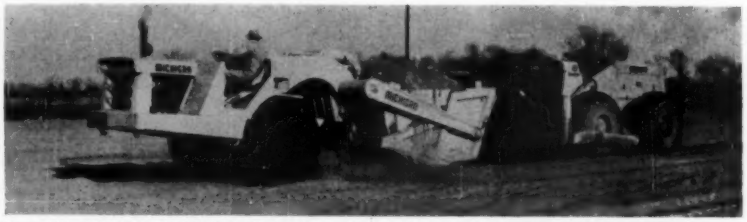
ADDRESS_____

CITY_____ STATE_____

## *Purchasing News*

### Clark Expands Michigan Line

In addition to its line of excavator-cranes and tractor loggers, the Construction Machinery Division of the Clark Equipment Co. will soon offer a line of tractor scrapers and tractor dozers, as well as major additions to its present line of "Michigan" tractor shovels. The new equipment will be previewed at the American Road Builders Show in Chicago, January 28 to February 2. It will be in production in 1957.



**New Model 110 "Michigan" tractor scraper and a "Michigan" 180 tractor dozer team up on a push-loading job.**

According to Clarence E. Killebrew, vice-president of Clark Equipment, "for the first time, three major categories of construction machinery have been engineered as a unified line of equipment." The new units will utilize the same basic design of matched power shift transmissions, torque converters and planetary-wheel axles developed for the "Michigan" tractor shovel.

Further details on the new "Michigan" line may be obtained from the CLARK EQUIPMENT CO., CONSTRUCTION MACHINERY DIV., 2495 PIPESTONE RD., BENTON HARBOR 35, MICH. Write directly, or you may use the Post Card on the insert following Page 50. Circle No. 974.


MH Class 250

M & H Gate Valves, Class 250, are similar in design, workmanship and materials to standard A. W. W. A. Class C valves, except the Class 250 valve is designed for higher operating pressures and is therefore heavier in weight. Class 250 valves are available in 14"-36" sizes, are iron body, bronze mounted, double disc, parallel seat, non-rising stem or outside screw and yoke. All valves of this class are given an hydrostatic test of 450 psi.

Class 250 valves are furnished with either hub or flanged end connections. Dimensions and drilling of end flanges conform to American Cast Iron Flange Standard, Class 250. Can be furnished with plain faced flanges if desired, also with standard accessories such as hydraulic or motor operation, gearing, by-passes, square bottom, extension stems and rollers-tracks-and-scrapers. Write or wire

M&H VALVE AND FITTINGS COMPANY
ANNISTON, ALABAMA

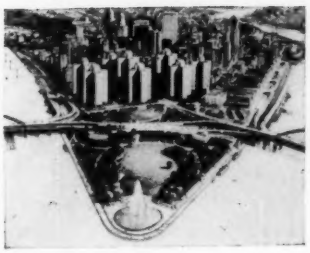

### New Recordak Processing Stations

**Drive-in service at Recordak's Los Angeles branch office.**

Recordak Corp., Dept. BB-12, 415 Madison Ave., New York 17, N. Y., announces the opening of a new microfilm processing station in Phoenix, Ariz., making a country-wide total of 35 Recordak Laboratories. The new station will service Arizona, New Mexico, and El Paso, Texas.

Recordak also reports a new address for the company in Los Angeles, Calif. The West Coast building has a drive-in service window. Customers can drive in to deposit film for processing while picking up yesterday's film.

*Progress in Pittsburgh....*



## ALLEGHENY COUNTY AUTHORITY

# SPECIFIES LONG LENGTH CONCRETE PIPE with RUBBER and STEEL AMSEAL JOINTS

**In keeping with Pittsburgh's remarkable record of progress, the Allegheny County Sanitary Authority is presently constructing an $80,000,000 combined sanitary and storm sewerage system designed to serve 70 communities. Pittsburgh's famous rivers and streams will benefit enormously from this big cleanup job which is one of the largest of its kind in the United States.**

American-Marietta's up-to-the-minute facilities in Pittsburgh are supplying many miles of high-quality, long-length concrete pipe with Amseal Joints to many of the nation's leading contractors for their work on both tunnel and open-cut interceptors. Approximately 50 varying sizes and designs are being made on schedule to meet the project's anticipated completion date.

The Amseal rubber and steel joint provides positive protection from both leakage and infiltration while the hard, dense, high-strength concrete guards against devastating and erosive sewage. Long lengths (16 ft.) speed installation, reduce number of joints, and mean real savings to owners both in construction and in operation.

*Our technical staff will be pleased to assist you with your pipe problems.*

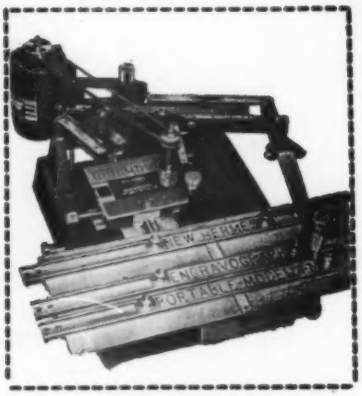
**AMERICAN-MARIETTA COMPANY**
**CONCRETE PRODUCTS DIVISION**
GENERAL OFFICES:
AMERICAN-MARIETTA BUILDING
101 EAST ONTARIO STREET, CHICAGO 11, ILLINOIS, PHONE: WHITEHALL 4-5600

engrave
your own
signs

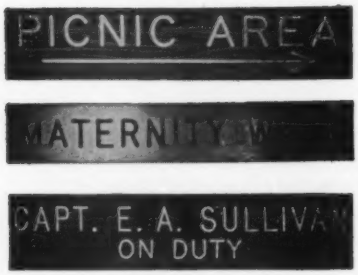
**MARKERS**

**NAMEPLATES**

*right on the premises*



**Portable machine,
so simple to operate
by anyone**



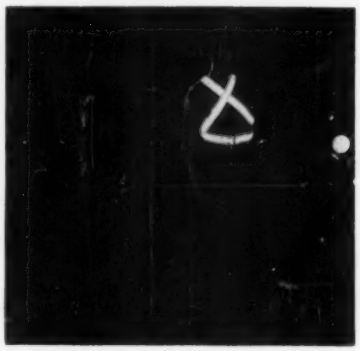

- **Make permanent attractive signs at less cost.**
- **Engraves on plastics, wood or metals.**
- **Tested and approved by City Departments.**

*For complete information write Dept. 87*

**NEW HERMES**
**ENGRAVING MACHINE CORPORATION**
13-19 University Place • New York 3, N.Y.

## *Purchasing News*

### Luminous Safety Belts for N. Y. Police



Increased protection for "New York's Finest" is announced by Stephen P. Kennedy, police commissioner. The N. Y. Police Department recently adopted two types of luminous safety belts to be worn by traffic officers and patrolmen. Both are made of "Scotchlite," a luminous material with a high degree of reflectability, available from the MINNESOTA MINING & MFG. CO., 900 FAUQUIER AVE., ST. PAUL, MINN.

One of the belts, of the Sam Browne type, is two inches wide and will be issued to members of the Traffic Division as part of their uniform in the evening hours. The traffic men will also wear a 1½-inch strip of "Scotchlite" around their caps. A belt made of the same material, 1¾ inches wide, will be available for members of the patrol force.

Under ordinary street light conditions, the new belts are visible up to 200 feet. When a low-beam headlight reaches a belt, it is visible up to 528 feet. Under bright-beam headlights, the belts can be seen for distances up to 792 feet.

More detailed information on the many advantages and uses of "Scotchlite," may be obtained directly from the manufacturer, or you may use the Post Card on the insert following Page 50. Circle No. 941.

### New Merchandising Kit for Outdoor Lighting

Migration to the suburbs has created a new market for outdoor lighting fixtures and equipment, according to the GENERAL ELECTRIC CO., NELA PARK, CLEVELAND 10, OHIO. To help electric utility companies and departments sell this market, the company is offering a new merchandising kit featuring educational, promotional and display material.

A theme of the new G.E. promotion is "Light for Living Outdoors," and the idea behind it is to encourage the growing trend toward lighting up yards and gardens. Homeowners who are building or remodeling are advised to include outdoor lighting in their plans.

The new merchandising kit includes handbooks, lists of manufacturers, and a 17-minute film, "Enchanted Evenings." For further information, write the company directly, or you may use the Post Card on the insert following Page 50. Circle No. 960.

### New Pump Attachment for I-H Tractors

Cities using their International 300 Utility tractors with loaders, backhoes or hydraulic motors, are offered a new front-mounted power take-off hydraulic pump attachment. The attachment is furnished in two capacities, 16 gpm and 23 gpm,

and connects directly into the regular hydraulic system of the tractor. It is available factory installed on new tractors or for installation on units already in the field.

Complete information on the new pump attachment may be obtained from the INTERNATIONAL HARVESTER CO., 180 N. MICHIGAN AVE., CHICAGO 1, ILL. Write directly, or you may use the Post Card on the insert following Page 50. Circle No. 969.

### Rockwell Mfg. to Offer Parking Meters

Willard F. Rockwell, Jr., president of the Rockwell Mfg. Co., 400 N. Lexington Ave., Pittsburgh 8, Pa., announces the firm's recent acquisition of the Dual Parking Meter Co., a subsidiary of the Union Metal Mfg. Co., and "certain assets" of three other Union Metal subsidiaries concerned in the parking meter business. Located in Canton, Ohio, Dual is the oldest and one of the largest parking meter manufacturing companies in the country.

# HANDLE 3 LOADS IN THE TIME OF 2

*and get big savings with*

## ROTO-PAC

On-the-job performance has proven that ROTO-PAC collects 3 refuse loads in the time it takes to collect 2 loads with the out-dated rear door compaction-type collection unit. The reason for this economy is ROTO-PAC's exclusive principle of escalator compaction.

Unlike conventional units, ROTO-PAC's *continuous* loading and compaction eliminates a separate loading cycle. The minutes saved at each stop mean up to one more full additional load per day per unit. Multiply this by your collection requirements and you'll see where the savings add up.

And, ROTO-PAC handles every kind of refuse with equal speed—ashes, rubbish, garbage, boxes, crates—all automatically broken up in the hopper and automatically conveyed into the body. Even Christmas trees are pre-crushed to make more room in the body for greater compaction.

The savings your community can achieve in refuse collection with ROTO-PAC's faster operation are only part of the story. You'll want full details on ROTO-PAC's low operating costs too. Write today for a demonstration.

**FACT-PACKED BOOKLET** tells you what to look for in a collection unit. Don't buy any refuse collection unit until you have checked the Comparison Chart. Write or phone for your copy. Ask for No. 84.

**CITY TANK CORP.**
53-09 97th Place, Corona, N. Y.
*Sales and Service in All Principal Cities*

## Measures Flow Electronically, No Loss of Head

You don't have to worry about plates, reduced pipe diameters, or other barriers in the line of flow when you use the Laub Electro-Caloric Flowmeter. By electronic means, the new instrument accurately measures, records and controls the rate of flow, as well as the total flow, without loss of head. Flow cell measuring elements are available for pipe from ½ to 8 inches in diameter.

The scale of the Electro-Caloric Flowmeter is uniform and is said to cover a range which is considerably wider than head-type flowmeters. The meters are easy to read, even at a substantial distance. The flow totalizing meter, reports the manufacturer, is a reliable watt-hour unit.

In addition to trouble-free operation and easy maintenance, the new Flowmeter offers negiligible pressure drop and fast response. It is entirely suitable for conductive or non-conductive liquids, slurries and corrosive fluids.

A more detailed description of the new instrument may be obtained from INDUSTRIAL DEVELOPMENT LABORATORIES, INC., 17 POLLOCK AVE., JERSEY CITY 5, N. J. Write directly, or you may use the Post Card on the insert following Page 50. Circle No. 957.


HELP KEEP OUR CITY CLEAN

HELP KEEP OUR VILLAGE CLEAN

HELP KEEP OUR BOROUGH CLEAN

HELP KEEP OUR STREETS CLEAN

HELP KEEP OUR PARK CLEAN

*Invitations to Automatic Cleanliness*

with

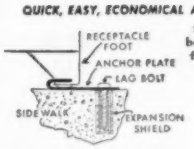
BENNETT

WASTE RECEPTACLES

Eye catching stenciled messages on 1, 2, 3 or 4 sides of Bennett Waste Receptacles silently invite people to help keep Cities, Villages, Boroughs, Parks, Streets and Sidewalks clean. People automatically respond to these silent invitations and deposit waste paper and refuse in these attractive, easy to use, conveniently placed waste receptacles. Bennett Waste Receptacles are made of heavy gauge steel with rounded corners, welded joints, stainless steel feet, special outdoor White, Gray or Green baked on enamel finish and many other features. Quality and every consideration for hard use are self evident throughout Bennett Self-Closing Waste Receptacles.

*Fill in and mail coupon today*

QUICK, EASY, ECONOMICAL ANCHORING METHOD




Showing one plate, lag bolt and expansion shield from the economical kit containing 4 of each.

THE BENNETT MANUFACTURING CO., ALDEN, N. Y. AC-12-56

Kindly send to my personal attention a FREE copy of the fully-illustrated Bennett Waste Receptacle Catalog listing standard stencils for messages.

Name..... Title.....

Municipality..... Street.....

City..... State.....


## For Snow and Ice Control

The big Walter Snow Fighter with underbody blade and sand spreader is the combination that the Walter Motor Truck Co. is offering to municipalities to counteract their snow and ice problems. The hopper full of sand gives

added effectiveness to the blade, enabling it to scrape away hard-packed snow and even ice. The special, 4-wheel traction permits the truck to move if only one wheel has a firm footing. A V-plow with wings can also be mounted on the front of the truck if desired.

Further details on the Snow Fighter are available from the WALTER MOTOR TRUCK CO., 1001-19 IRVING AVE., RIDGEWOOD, L. I., N. Y. Write directly, or you may use the Post Card on the insert following Page 50. Circle No. 954.

## Dorr-Oliver Forms Australian Subsidiary

Dorr-Oliver, Inc., Stamford, Conn., announces the recent formation of Dorr-Oliver Pty. Ltd., a wholly owned subsidiary located in Australia. Beginning next month, the new company will design, market and service a complete line of D-O equipment for the sanitary field of sewage disposal and water treatment in the Australia-New Zealand area.

D. U. Macintosh, associated with Dorr-Oliver activities in Australia since 1933, will be managing director of the com-

pany. W. V. Hobart Duff, managing director of Hobart Duff Pty. Ltd., will serve on the board of directors and act as adviser-consultant to the new company.

## A Power Lifter

Here is a heavy-duty power tool, the Multi-Pul, that can be used for lifting, lowering and pulling operations. One user tells of its lifting and lowering a 4-ton freight elevator. Another explains how his Multi-Pul winches equipment on

and off the company's field trucks. The manufacturer says it is the only reliable, self-contained cable unit, and recommends it for utilities, airports, street and other city departments.

The new power lifter is described in *Multi-Pul*, an informative folder from the MULTIPLE CORP., 1908 N. MAIN ST., DAYTON 5, OHIO. For your copy, write the company directly, or you may use the Post Card located for your convenience on the insert following Page 50. Circle No. 948.

## Fire Apparatus Goes On Tour

A recent series of fire apparatus demonstration tours by the Four Wheel Drive Auto Co., Clintonville, Wis., gave municipal fire chiefs throughout the Southeast, Gulf Coast, Midwest, West and Northwest sections of the United States an opportunity to see and try new combination electric or manual control pumping engines. Featured was the FWD Special "750" pumper, a 750-gallon-a-minute pumping unit designed for dependable, low-cost operation.

The Class A pumpers shown on the tours were equipped with an electric priming pump and had electric controls for shifting and operating the transfer valve to provide either manual or electric operation. The Electro-Matic pumps on the touring engines were custom-engineered for FWD's fire engine chassis by the Waterous Co.


KOHLER Electric Plants

move jobs faster where the work is done

Compact portable model provides low-cost power for chain saws used in pruning and in cutting up fallen trees after storms; also for grass shears, hedge trimmers, carpenters' saws, drills, electric spades, pipe threaders and cutters. Two-wheel rubber-tired hand truck available.

Other models, 500 watts to 35 KW, for street repair trucks, police and fire departments, civil defense centers. Also stand-by models to insure uninterrupted power for hospitals, sewage treatment and filtration plants, communication systems, schools, when central station service is cut off.

Write for folder M-13

MODEL 1.5M5, *1500 watts, 115 volt DC. Manual starting; 101 lbs., handles for carrying. Also 115 volt AC; 130 lbs.*

Kohler Co., Kohler, Wisconsin • Established 1873

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION CONTROLS

GUNITE
The Modern Way...

for Repairing, Constructing, Lining:

- Reservoirs • Dams
- Filter Plants • Tanks
- Sewage Disposal Plants
- Stadiums • Bridges
- Sea Walls • Swimming Pools

*Write for more information, including 48 page "Gunite" booklet.*

PRESSURE Concrete Co.
FLORENCE, ALA.
315 So. Court Street

Liberty Life Bldg. CHARLOTTE, N. C.
33 N. LaSalle Street CHICAGO, ILL.
193 Emmet Street NEWARK 5, N. J.

PROGRESSIVE CITIES SELECT

F&E INCINERATOR STOKERS

Designed and manufactured by a century-old concern with 40 years' experience in designing, engineering and completely manufacturing hydraulically-powered stokers.

**"F&E" Hydraulically-Powered Stokers are the most talked-of incinerator advancement in the field today.**

Should you wish to see an "F&E" Incinerator Stoker in operation and get firsthand information on their revolutionary performance, we will be pleased to advise where the installation nearest you is located.

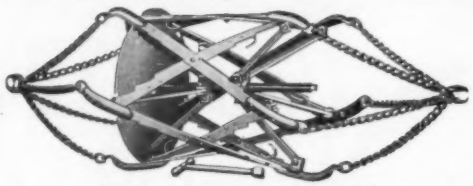
F&E

FLYNN & EMRICH CO.

301 NORTH HOLLIDAY STREET • BALTIMORE 2, MARYLAND



EXPANDING ROOT CUTTER SEWER CLEANER



Fits in on Every Sewer Cleaning Job
Adjusted in 30 seconds to fit any sewer from 8 to 30 inches.

Will clean the entire sewer wall, top, and sides as well as the bottom, cutting and removing the roots and caked sediment, putting the sewer system in almost 100% clean condition.

Open and in action removing roots and cake sediment like this.

*Write for our new catalog on complete sewer cleaning equipment.*

EXPANDING SEWER MACHINE COMPANY
108 East Walnut St. Nappanee, Ind.



# Are WATER RATES a Problem in Your City?

**YOU can find out what other cities are charging for water by purchasing "Modern Water Rates," just published by THE AMERICAN CITY.**

It provides data on rates used in 130 separate water systems selected from 23 states and covering cities ranging in size from Chicago, Illinois, to Alto, Texas (population 1,007). Of the rates selected, about 12% are used by private water companies and the balance are from public systems of some type.

"Modern Water Rates" can be helpful to you in making recommendations on rate adjustments in your municipality. Order your copy today. You can save $.50 by sending cash, check or postal money order (pay to the order of THE AMERICAN CITY) with the coupon.

To: Circulation Department
THE AMERICAN CITY AC-12
470 Fourth Avenue
New York 16, New York

Yes, please send me by return mail.....copies of your "Modern Water Rates" at:

.....$2.50 per copy. My payment is enclosed with this order.

.....$3.00 per copy. Please send bill. ... ... ... ... ....

Name: .....

Title: .....

Address: .....

## Low-Cost Portable Heat

An economical way to heat sheds, loading platforms and municipal warehouses, and to provide temporary heat in public construction, is with this new gas-burning salamander offered by the HAUCK MFG. CO., 111-121 TENTH ST., BROOKLYN 15, N. Y. The light-weight unit burns liquefied petroleum or bottled gas, and is available in two sizes: 150,000 BTU and 225,000 BTU per hour. It is safe to use and operates without smoke, fumes or soot.

The new salamander has a shell and hood of 16-gauge steel on channel legs of 10-gauge steel. A low-pressure burner is available for use with L-P gas at 11-inch water column, and is furnished with automatic safety shut-off and control valve. A high-pressure burner is for gas at 10 to 25 psi, and is furnished with a control valve and optional automatic safety shut-off.

Additional data on the portable heating unit may be obtained directly from the manufacturer, or you may use the Post Card on the insert following Page 50. Circle No. 945.

## Submergible Pump for 4-Inch Wells

Visitors at the National Water Well Convention held at Columbus, Ohio recently, were introduced to a new 5-hp submergible pump designed especially for water wells four inches in diameter. Two models were shown: the 51A18E for wells up to 900 feet deep; and the 75A7E for wells up to 1,500 feet deep. Other models for depths to 8,000 feet are available on special order.

The new 5-hp pump is fully described and illustrated in *Bulletin R-549.* For your copy, write REDA PUMP CO., ADVERTISING DEPT., BARTLESVILLE, OKLA., or you may use the Post Card on the insert following Page 50. Circle No. 949.

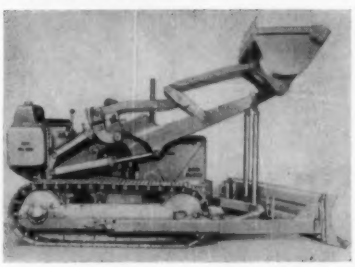
## Broader Engineering Coverage

A Seattle (Wash.) engineering organization, Gellert, Griffin, Harrigan & Associates, recently announced its affiliation with the 40-year-old Harrisburg (Pa.) firm of Gannett, Fleming, Corddry & Carpenter, Inc.

In a colorful 16-page brochure, the company outlines the numerous engineering fields covered by its unified engineering-management services. Included are sewer and water systems, airports, highways and bridges.

For your copy, write GELLERT, GRIFFIN, HARRIGAN & ASSOCIATES, LYON BLDG., SEATTLE 4, WASH., or you may use the Post Card on the insert following Page 50. Circle No. 978.

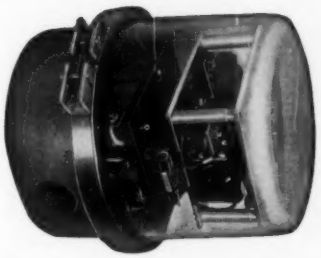
## Bulldozer Attachments for Traxcavator



Caterpillar Tractor Co. announces the introduction of new angling blade bulldozers designed for use with Cat. No. 977, No. 955, and No. 933 Traxcavators. These efficient attachments are especially useful for backfilling trenches after pipe has been laid, and for replacing earth around new foundations. Three models are available: No. 977A, No. 955A and No. 933A.

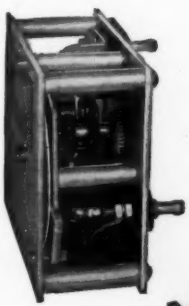
A detailed description of the new bulldozers may be obtained from the CATERPILLAR TRACTOR CO., PEORIA, ILL. Write directly, or you may use the Post Card on the insert following Page 50. Circle No. 943.


**TIME-O-MATIC**
**FLASHERS**
**JACK MOUNTED**

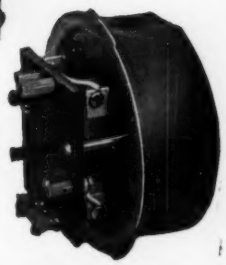


Time-O-Matic Jack Mounted Flasher in Standard Meter Case

Single or two circuits, every model with built-in eliminators. Available with standard meter case (above) or separately with Jack mounting panel (below).



Time-O-Matic Jack Mounted Flasher Only



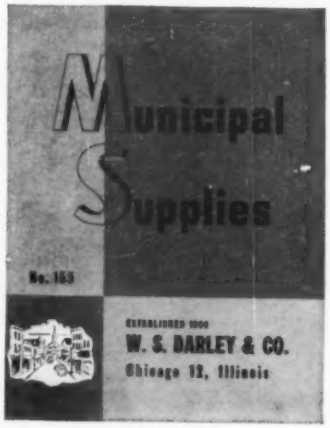
Time-O-Matic Jack Panel in Meter Case

**SPECIFY DEPENDABLE TIME-O-MATIC**

*"A Sign of Good Control"*

**TIME-O-MATIC INC.**
P. O. Box 850
1108 Bahls Street
Danville, Illinois

NEW CATALOG!

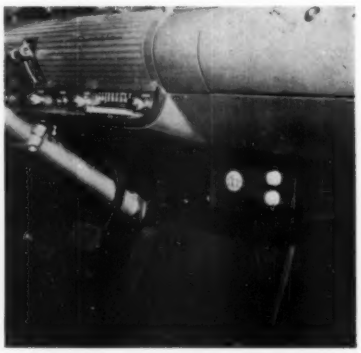



WRITE TODAY
For
108 PAGE
MUNICIPAL CATALOG

W. S. DARLEY & CO.
CHICAGO 12

## *Purchasing News*

### FM Radio Receiver for 2-Way Systems



The Volunteer, a new communications receiver for monitoring police and fire department, government and industrial radio frequencies, is announced by INDUSTRIAL RADIO CORP., 428 N. PARKSIDE AVE., CHICAGO 44, ILL. The small set uses the latest type miniature tubes, transistors (in auto sets), and an improved dual conversion superheterodyne circuit which employs a crystal for tuning stability. A squelch circuit silences the receiver between calls.

The AC models employ 15 tubes, and have built-in loud speakers and power supplies. Mobile models are available for 6- or 12-volt electrical systems and use power transistors in the output to reduce battery drain. The antenna terminal is designed to accommodate an ordinary car radio antenna.

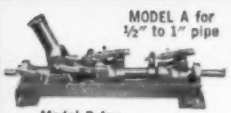
The Volunteer measures 4 x 6 x 8 inches, and is easily mounted anywhere under a car dash. It has received FCDA designations for both low band (25 to 55 mc) and high band (140 to 175 mc) operation.

Further details on the new radio receiver may be obtained directly from the manufacturer, or you may use the Post Card on the insert following Page 50. Circle No. 965.

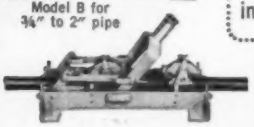
### Low-Cost Power

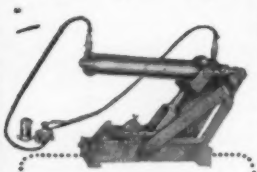
Economical power for municipal waterworks and utility service is assured with the installation of the new Worthington

Only the
Trojan Pipe Puller & Pusher
gives you continuous action...
No Resetting of Grip!




CUTS COSTS! SAVES TIME-
in installing or renewing pipe under pavement



The Trojan combines pushing and pulling operations in one machine—eliminates all time-killing resetting of grip—keeps pipe continuously moving. Does the job at lower cost—in far less time.

Model A weighs 65 lbs.—requires only 5' trench. One man can easily install the average service. 15 tons of pushing pressure possible.

Model B (either hand or air powered) needs only 5½' trench—has 3 speeds for different soils—is reversible in 30 seconds. Push pipe comes in 30" lengths, assures straight travel.

NEW AIR POWERED
Model B
Does all the work for you. Handles ¾" to 2" pipe.

*Write today for full details!*

The TROJAN Manufacturing Co.
1113 Race Drive • Troy, Ohio

FILTER SAND AND GRAVEL

Produced from an inland pit hence free from river contamination and foreign matter.

Shipment in bulk or bagged.

Many of the larger filter plants throughout the United States are equipped with our products.

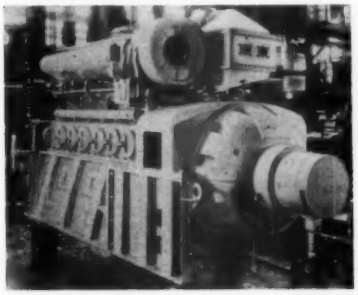
PROMPT SHIPMENT

*Inquiries and orders solicited.*

NORTHERN GRAVEL COMPANY
Muscatine, Iowa
P.O. Box 307 Amherst 3-2711

W9 engine. This small, heavy-duty, 4-cycle unit ranges in capacity from 400 to 1,400 hp, and is available fully assembled. All you do is place the W9 "Power Package" on its foundation. No major aligning is required.

The new engine is constructed for con-



**Fully assembled W9 engine with generator comprises a "Power Package" ready for installation.**

tinuous duty, and is designed for high-output turbo-supercharged operation. A special Jet-Swirl design swirls the air as it enters the cylinder. This assures a rapid mixture of the air and fuel, and provides clean, efficient combustion.

Additional information on the W9 "Power Package" may be obtained from the ENGINE DIVISION, WORTHINGTON CORP., P. O. BOX 953, BUFFALO 5, N. Y. Write directly, or you may use the Post Card on the insert following Page 50. Circle No. 970.

## Badger Meter Opens Dallas Branch

**New plant will handle Badger sales activities in the Southwest.**

A new Southwest area branch plant with complete repairing and testing facilities has been opened by the Badger Meter Mfg. Co., Milwaukee, Wis. Located in the Brook Hollow Industrial District of Dallas, Tex., the plant was established to handle all Badger sales activities and to provide customers with better delivery on meters and parts. It will be under the supervision of Norman H. Abrams, Southwest sales manager.


**Seagrave**
**COMMERCIAL**
**Aerial Ladder**

*A Seagrave Quality Aerial Ladder at Economical Price*

65 foot aerial ladder of all steel construction, body and operational features . . . all standard Seagrave quality. The saving is in building this ladder on a commercial chassis. Write today for information.

THE SEAGRAVE CORPORATION—Columbus, Ohio
THE GREATEST NAME IN FIRE APPARATUS

SAVE MONEY
SEND US YOUR ORDERS FOR ROTARY SWEEPER NEW BROOM CORES

Do You Know We Manufacture NEW Cores of the following Types:

- Grace (3 types)
- Hough
- M-B (Meli-Blumberg)
- Detroit-Harvester
- Fordson
- Rosco
- Little Giant
- Huber
- Lull
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and other popular makes

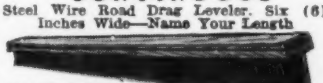
YES! We Can Make Cores to Your Specification

We Rebuild—Repair—Refill All Makes and Sizes of Broom Cores.

*Immediate Shipment*

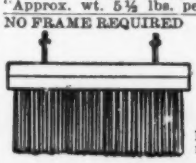
SUGGESTION—To Far-Away Users—Buy your NEW Cores only without any filling or we will furnish complete Palmyra-Hickory or Bass Fibres—Even Steel Wires.

Road Builders—It's Sensational!!
BIG PECKERWOOD BIG
C-O-N-T-I-N-U-O-U-S
Steel Wire Road Drag Leveler. Six (6) Inches Wide—Name Your Length



Not STAPLE set
In Stock Lengths of 4-6-8-9-10 or 12 foot. Only $3.50 Foot
"Approx. wt. 5½ lbs. per ft."

NO FRAME REQUIRED



The LITTLE PECKERWOOD
3" Wide, 15" Length
This Fits Your Frame
NOTE—Both Drags Can Be Furnished with Fibre.
Only $2.50 Ea.

KENNEDY'S
Since VAN BRUSH MFG. CO., INC. 1928
327 Southwest Blvd., Kansas City, Mo.

**PARCOA** provides...

A NEW CONCEPT FOR OFF-STREET PARKING

AUTOMATIC PARKING features...

- ★ FLEXIBILITY OF CONTROLS—Choice of exclusive coded "card-keys", coins, tokens or any combination.
- ★ NO ATTENDANTS NEEDED—Pays for itself.
- ★ SIMPLICITY OF OPERATION
- ★ MINIMUM MAINTENANCE
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- ★ SAFETY . . . DEPENDABILITY

Write for descriptive literature.

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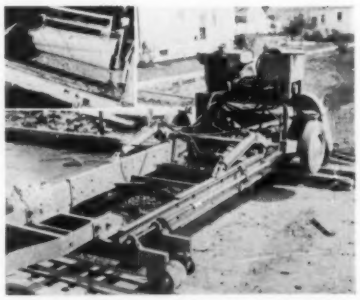
4619 N. Ravenswood Ave., Chicago 40, Ill.
Phone LOngbeach 1-0217
Sales and Service Offices in Major Cities listed under BOWSER, Inc.

## Fast Way to Build Curbs and Gutters

Used on any street paving job, this new automatic curb and gutter builder forms monolithic or integral roll-type curbs at the same time that the main slab is formed. The machine greatly reduces manual labor costs by eliminating the separate construction of curbs. It is available in a variety of sizes, including units 10 to 15, 12 to 18½, 20 to 25, and 18 to 25 feet wide.

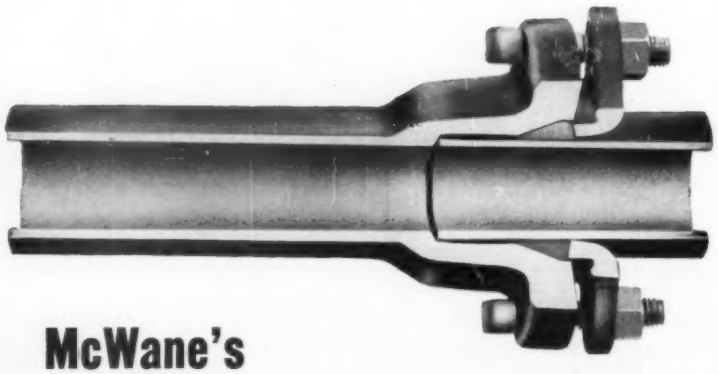
In operation, a hydraulically-driven curb forming roll, spinning at 300 rpm, profiles the gutter line and forms the curb. Concrete for the curb is left along the high curb side of the slab by an accessory offset screed attachment on the finisher, operating ahead of the curb builder. Easily replaced contour cams provide for changes in curb and gutter profile.

A more detailed discussion of the new automatic curb and gutter builder is contained in literature from GENERAL ROAD MACHINES, INC., NILES, OHIO. Write directly, or you may use the Post Card on the insert following Page 50. Circle No. 958.



**The new machine forms a monolithic curb and gutter as fast as the main paving slab is poured.**


*Quick Shipment!*



**McWane's**

**MODERN 20-FOOT LENGTHS**

**2" and 2¼" CAST IRON PIPE**

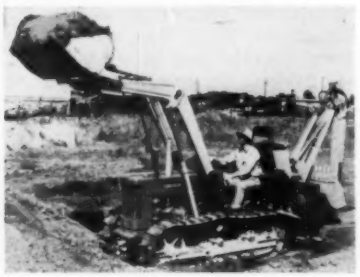
McWane 2-inch and 2¼-inch centrifugal CAST IRON PIPE in 20-foot laying length has all the well known characteristics of Super-DeLavaud larger-diameter pipe—smooth, straight barrel, even wall thickness, sound metal section, easy to cut and easy to tap.

But, it has few joints to make; lower construction costs. Every time you lay a pipe, your line grows 20-feet longer.

Service connections are made with standard corporation cocks for water and standard No-Blo tees for gas. Standard strap saddles or service clamps can be used if preferred. Write or telephone nearest McWane Sales Office.

**McWANE CAST IRON PIPE COMPANY**
GENERAL OFFICES & FOUNDRIES, BIRMINGHAM, ALA.
Sales Offices: Dallas Chicago Kansas City New York Birmingham


## Loader and Backhoe for John Deere Tractors



Mid-Western Industries, Inc., has adapted the efficient Davis Model 102 loader and the Davis Model 185 backhoe to fit John Deere 420 C crawler tractors. Both attachments utilize the same hydraulic system which is powered by an independent direct crankshaft drive. A special selector valve permits immediate use of either unit.

The standard loader bucket has a capacity of 11 cubic feet, and the utility bucket has a capacity of ½ cubic yard. Other loader attachments include a dozer blade, fork lift, landscape bucket, crane, scarifier and flare bucket.

The Davis backhoe operates at right angles to the tractor as well as to the rear, and can be attached or detached in minutes. A full range of backhoe buckets are available.

Additional details on the new attachments may be obtained from MID-WESTERN INDUSTRIES, INC., 1009 S. WEST ST., WICHITA, KANS. Write directly, or you may use the Post Card on the insert following Page 50. Circle No. 959.

*No other filtering medium compares with*

**ANTHRAFILT**
Trade Mark Reg. U. S. Pat. Off.

**Anthrafilt stands alone as the one Filtering Medium that is best for all types of filters.**

Years of efficient and economical use in every type of filter plant has made ANTHRAFILT the standard of excellence in the filtering medium field.

**ANTHRAFILT**

*offers important advantages over sand and quartz*
DOUBLES length of Filter runs. • REQUIRES only half as much wash water. • KEEPS Filters in service over longer periods. • INCREASES Filter output with better quality effluent. • GIVES better support to synthetic resins. • PROVIDES better removal of fibrous materials, bacteria, micro-organic matter, taste, odor, etc. • IDEAL for industrial acid and alkaline solutions. • EFFECTIVE filtration from entire bed. • LESS coating, caking or balling with mud, lime, iron, or manganese.

IDEAL FOR USE IN EVERY TYPE OF FILTER

*Write for further information, test samples and quotations to:*

**PALMER FILTER EQUIPMENT CO.**
P.O. Box 1696 — 822 E. 8th St., Erie, Pa.
*Representing:*
ANTHRACITE EQUIPMENT CORP.
Anthracite Institute Bldg., Wilkes-Barre, Pa.

**For all-'round deodorizing...**

**ROUNDS**

Fragrant, laborless deodorant discs for urinals, bowls, garbage pails, lockers, closets

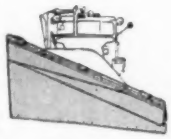
**Deodoroma ROUNDS** cost in use averages only a *fraction* of one cent a day. Rounds are formed under 70,000 pounds pressure: are dense and durable. Fragrance is locked in: lasts until the last particle has vaporized—there's no harsh "moth cake odor." Packed eight to the telescoping box—each Round sealed airtight—easy-to-shape Holzit wire holder in every box. For literature write to The C. B. Dolge Company, Westport, Conn.

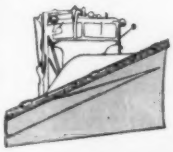
For free sanitary survey of your premises ask your Dolge service man

*expendable* DOLGE
WESTPORT, CONNECTICUT

**There is only one Roll-Over ...and it's made by FRINK**

**For Airports and Dual Highways**





The Frink Taper Blade Roll-Over Sno-Plow combines the advantages of the reversible blade type with higher speed, deeper snow handling qualities of the one-way plow.

This plow throws and spreads the snow, yet can be hydraulically rotated from left hand to right hand plowing position in 15 seconds, enabling the operator to throw *all* the snow in the most favorable direction as dictated by the wind or the location of the disposal area.

Deadheading is eliminated, therefore, less equipment is needed. Parking is easier, because the truck can be parked with the Roll-Over in the upright position within its own width.

The Frink V-Type, One-Way Type, and Reversible Type Sno-Plows can all be attached to the Roll-Over Lifting Device Assembly.

FRINK SNO-PLOWS

**Clayton, 1000 Islands, New York**
*Made in Canada by*
**Frink Sno-Plows of Canada, Ltd., Toronto, Ontario**

# ATLAS CRANE COMPANY
## The FIRST and ONLY Crane with 2 Independent Hooks

CUTTING LIMB LOWERING LIMB

80 Foot Crane being used to remove dead Elm Tree. Climber's line is attached to top of crane as a safety feature so accidental falls are avoided.

*Write to Dept. T-1 for literature*

**ATLAS CRANE CO.**
**16-18 Carlton Avenue**
**Mt. Vernon, New York**
**Phone: Mt. Vernon 4-1871**

***Cutting around overhanging shrubbery is easy with Riding Sulky Attached.***

*Compare!*
Arrange for a FREE demonstration today. See how a LOCKE does it better in half-the-time!

# Cut and Trim . . . faster, cleaner, more economically

Ease of handling and flexibility, coupled with narrow overall width, practically eliminates hand trimming. Locke does a complete job *in one operation* without streaks or rolled down uncut grass. It's the answer to cutting out mowing problems and cutting down labor costs and physical exertion.

***America's Most Wanted Power Mowers!***

- Overhangs raised borders ⅓ their width
- Turns at any angle, without raising cutters
- Controls conveniently placed
- Model 70-75 available with reverse gear transmission
- Powerful, quiet B & S engine

***Choice of 4 Basic Sizes:***

*SINGLE—25" or 30"* *TRIPLEX—70" or 75"*

*Add sulky, in a minute, whenever desired.*

*Send for literature and name of nearest LOCKE Dealer.*

Locke **POWER LAWN MOWERS**
Since 1928
*Handle Easily . . . Save Time — Money — Energy*

**1315 CONNECTICUT AVE. BRIDGEPORT 1, CONN.**

## Purchasing

### Keep Winter Streets Ice Free

Whatever your winter ice-control problems, you can find a quick, low-cost solution in the Baughman line of spreading equipment. Highlighting the line is the hydraulic Spread-Mobile, Model FS-56, a truck-mounted body featuring "Center-Spred" design. The hopper is located between the front and rear wheels of the truck for better traction, improved visibility and better control of pattern. Width of spread, speed of discharge, and starting and stopping are all cab-controlled.

Another sand and cinder spreader, Model K5-SC is a tail gate model with a choice of four drives: P.T.O. with mechanical or hydraulic operation; or auxiliary engine with mechanical or hydraulic operation. This efficient unit can be used all-year-round for ice control in winter, and for chip spreading and oil blotting in other seasons.

A detailed description of all the spreaders in the Baughman line, including dump-body and pull-type units, may be obtained from the BAUGHMAN MFG. CO., INC., 150 SHIPMAN RD., JERSEYVILLE, ILL. Write directly, or you may use the Post Card on the insert following Page 50. Circle No. 961.

### Liquid Coating for Masonry

Now you can protect surfaces from the damaging effects of moisture seepage and dampness quickly and easily with Rust-Oleum Surfa-Sele. This new, pigmented protective sealer is available in liquid form, and is simple to apply—even over damp surfaces. It is formulated with a specially processed fish oil vehicle which enables the coating to penetrate deeply into the pores of the surface.

A more detailed discussion of Rust-Oleum Surfa-Sele, recommended for brick, concrete, asbestos and other masonry surfaces, may be obtained from the RUST-OLEUM CORP., 2799 OAKTON ST., EVANSTON, ILL. Write directly, or you may use the Post Card on the insert following Page 50. Circle No. 976.


*How to*
**CUT COSTS**
*and get better*
**SEWAGE EJECTION**
**told in BULLETIN S-50 by BLACKBURN-SMITH**

**Blackburn-Smith Mfg. Co.**
**57 Garden Street, Hoboken, N. J.**
I want to know how I can get better sewage ejection at lower cost.
Name .....
Company .....
Address .....
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Eliminate complex piping . . . do without screens, impellers, and shredders that need constant, costly cleaning . . . get dependable, automatic operation . . . . . in short, get better sewage ejection for less money. You'll find out how in Blackburn-Smith Bulletin S-50 which the coupon will bring you. These time - tested pneumatic sewage ejectors have float, electrode controls, or a snap-action valve that's both float and pneumatically controlled.

For details about the BEST in modern sewage ejection, mail the coupon today.

**Blackburn-Smith Mfg. Co. Inc.**
**57 Garden St., Hoboken, N. J.**
**Phones: HOboken 3-4425**
**New York, BA 7-0600**

Sterelators by Everson

**Chlorine Gas Control Equipment**
**Visible Flow Indication**
**Vacuum Solution Feed**
**for**
**Water Works**
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**Sewage Treatment**
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**Everson STERELATORS can be furnished for fully automatic, semi-automatic and manual control**

***Write for STERELATOR Bulletins***

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LEADITE
The Pioneer Self-Caulking Material for C. I. Pipe

**4 REASONS**
why more miles of cast iron water mains are joined with LEADITE than with any other melted self-caulking material:

- **MELTS EASILY**
- **GOES FARTHER**
- **SAVES TIME, LABOR, COST OF MATERIAL**

- **MAKES A GOOD TIGHT JOINT THAT IMPROVES WITH AGE !**

**THE LEADITE COMPANY**
Girard Trust Co. Bldg., Phila. 2, Pa.

No Caulking

## Truck Loader Gets Self-Loading Bucket

Such year-round municipal jobs as sand and gravel operations, removing excess spoil, leaf pickup, snow removal, and street and highway maintenance are faster and easier with the new M-B truck loader. The unit has a hydraulically-operated jaw that swings down and reaches out to meet ground level about 13 inches forward of the lip of the bucket. The jaw smoothly completes its closing cycle by pulling in and holding the "full load" in the bite of the bucket.

With the addition of the new, self-loading bucket, it is no longer necessary to ram the truck into a stockpile to obtain a full bucket. Thus, there are no shock loads on the truck, its frame or shovel mechanism. When picking up small piles, the jaw fills the bucket quickly and easily without "chasing" the material along the street or using additional men to sweep or shovel into the bucket.

The M-B loader is designed to fit almost all types of trucks, including 4-wheel-drive units, cab-over, tilt cab, and conventional models, without violating legal over-all truck width restrictions. Heavy-duty bucket capacity is ½ cubic yard with larger buckets available for special jobs.

More detailed information on the new truck loader with self-loading bucket may be obtained from the M-B Corp., New Holstein, Wis. Write directly, or you may use the Post Card located for your convenience on the insert following Page 50. Circle No. 973.

## Power Spreader Speeds Chip-Sealing Operations

Municipal street departments can save time, manpower and money when they use the new Spread Master for chip sealing. With only a 2-man crew on the job, the Spread Master makes chip spreading a continuous operation. There is no need to stop the spreader to hook and unhook trucks delivering cover-coat material. This assures immediate coverage of applied oil, without using drag and other types of brooms.

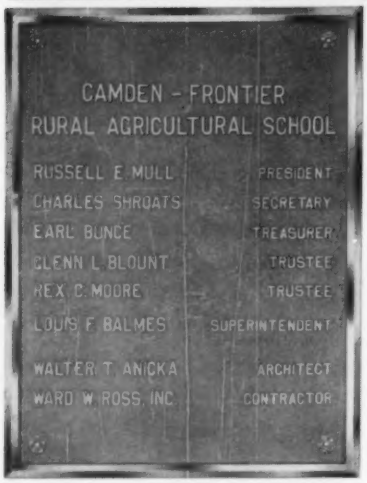
With the efficient Spread Master, the sprayed surface is covered in one continuous operation, providing a tight, dense, uniform mat. Larger chips are placed in the asphalt first and are followed by finer chips, filling all the voids. When rolled, the choice chips are keyed and wedged in place.

The new power spreader is 7 feet-6 inches high, 20 feet long, and weighs 14,000 pounds. Two 20-inch conveyors deliver material from the truck receiving hopper to the spread hopper.

Full facts on the Spread Master may


**MICHAELS** BRONZE AND ALUMINUM PLAQUES

*For Every Purpose* ANY SIZE • ANY SHAPE • ANY DESIGN



Whatever your br..nze or aluminum plaque requirements, it will pay you to contact Michaels. You'll get high-quality work and fast service. We will furnish sketches and quotations without cost or obligation. Michaels also manufactures a wide range of building materials in aluminum, bronze and stainless steel. When writing for literature please indicate products in which you are primarily interested.

**MICHAELS PRODUCTS**

| | |
|---|---|
| Louvers | Church Work (special) |
| Letters | Bronze Inurnment Urns |
| Spandrels (cast & extruded) | Astragals (adjustable) |
| | Store Fronts (special) |
| Name Plates | Bronze Vases (cemetery) |
| Honor Rolls | Memorial & Grave Markers |
| Check Desks | Vertical Pivoted Windows |
| Vault Grilles | Railings (balcony, counter & stair) |
| Calendar Racks | Architectural Curtain Walls |
| Tablets & Signs | Doors (entrance & mausoleum) |

"TIME-TIGHT" Museum & Trophy Cases
MI-CO Parking Meters (manual & automatic)

**The Michaels Art Bronze Co., Inc.**

P. O. Box 668-AC Covington, Kentucky

*Since 1870 the name Michaels has been a symbol of exceptionally high quality.*

be obtained from FLAHERTY MFG., INC., P. O. BOX 1042, POCATELLO, IDAHO. Write directly, or you may use the Post Card on the insert following Page 50. Circle No. 972.

## Backhoe-Loader for I-H Tractors

Your International W-400 industrial tractor will be a lot more useful on municipal applications when you equip it with this backhoe-loader combination. The Loadmaster Loader, Model LM-3A, and the Model D-90 "Chief" backhoe have been designed by the SHAWNEE MFG. CO., INC., 1947U NORTH TOPEKA AVE., TOPEKA, KANS. Both are easily installed and quickly dismounted.

The Loadmaster, reports Shawnee, will lift up to 3,500 pounds to a nine-foot dumping height, and features double-

acting hydraulic cylinders and chrome-plated rods. A variety of attachments are available to replace the bucket, including a bulldozer backfill blade, a 76-inch utility bucket, a 66-inch material bucket and a weight box.

The "Chief" backhoe digs 14 feet deep, reaches horizontally 20 feet, and has a special "push-pull" design. It operates in three 120° quartants which may be changed by the operator without moving from his seat.

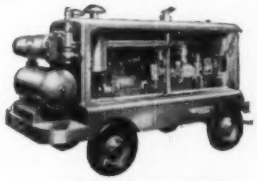
Full details on the new backhoe-loader combination may be obtained directly from the Shawnee Mfg. Co., or you may use the Post Card on the insert following Page 50. Circle No. 950.

## New Distributor for Mack Trucks

Mack Trucks, Inc., 1355 W. Front St., Plainfield, N. J., recently appointed the Howard-Cooper Corp. as distributor for its line of fire apparatus in Washington, Oregon and Northern California. The new distributor is located in Portland, Ore. Frank R. Cooper is president of the firm, and Frank S. Parker is executive vice-president.

**Trenching 7 miles of street,** this Jaeger "125" Roto ran two 80 lb. breakers to line-cut and break a 7" top of asphalt over brick—averaged 1200 sq. ft. per 8 hr. day—used only 1½ gals. of fuel per hr.

**Jaeger "125" Rotary speeds street work**



Jaeger Rotary "600"

Instantaneous air delivery, under close and smoothly modulated control, enables the Roto 125 to maintain 100 lbs. minimum pressure under all demands up to 125 cfm. High efficiency results in slower speed operation, less fuel consumption, longer engine life than any other rotary. See your Jaeger distributor or ask for Catalog JCR5.

**THE JAEGER MACHINE COMPANY** 505 Dublin Ave., Columbus 16, Ohio

LOADER • PUMPS • MIXERS • TRUCK MIXERS • PAVING MACHINES

**PUSH PIPE**
*under streets, walks, tracks, floors . . .*

**. . . with a GREENLEE PIPE PUSHER**

Speed jobs with this quick, simple way to install underground pipe. With the GREENLEE *one man* pushes pipe under obstacles . . . no tearing up of pavement, floors, lawn . . . eliminates extensive ditching and tedious backfilling! Two models and special power pump to fit your various jobs. Write for facts today.

GREENLEE

Greenlee Tool Co., 2032 Columbia Ave., Rockford, Ill.

**TWO PIECE**

sliding or screw type cast iron valve boxes for covering 4" thru 10" valves for water or gas. Rugged construction for lifetime service. 5¼" shaft. Extensions as required.

*Adjustable*
**VALVE BOXES**
**THREE PIECE**

valve boxes supplied with separate bases are available in sliding or screw type. Made with 5¼" and 7" shafts with extensions as required. Complete line of service and roadway boxes.

**ALABAMA PIPE CO.**

We Invite Inquires to Our Nearest Sales Office
120 S. Michigan Ave. / 350 Fifth Avenue
Chicago, Illinois / New York 1, New York
*General Sales Offices*
ANNISTON, ALABAMA

APCO

FROM THE WORLD'S FINEST DETECTION EQUIPMENT MANUFACTURERS

**Let 1 instrument do all your work...**

THE *Dualtronic* MODEL LC-5

Here is the instrument for which Municipalities have been looking... ONE instrument that locates Pipes, Leaks and Valves, yet costs no more. Model LC-5 not only saves you money but does the job accurately and dependably. Ruggedly constructed. Compact. Lightweight. Simple, one man operation. Model LC-5 is fully guaranteed.

***plus these BIG features:***

1. Use as Pipe Locator, Leak Detector, Valve Locator.
2. Pin-Point Detection.
3. Automatic on-off and power switching.
4. Crystal microphone.

*The* GOLDAK *Company*

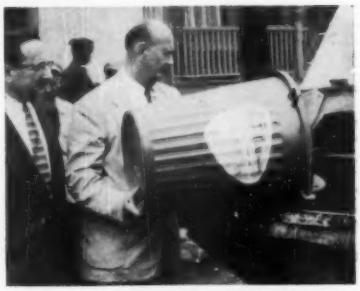
Leading Electronic Manufacturers Since 1933

1544 W. Glenoaks Blvd.
Glendale 1, Calif.

WRITE FOR COMPLETE BROCHURE

## *Purchasing*

### Plastic Trash Can Is Easy to Handle



**George Lauback, City Health Officer for Elizabeth, N. J., demonstrates the ease in handling this new 22-gallon polyethylene trash can. Looking on is Alfred Lippman, sanitation contractor.**

New 20-gallon waste receptacles constructed of light-weight plastic are offered by LOMA PLASTICS, INC., FORT WORTH, TEX. The giant-size cans won't break or rust and completely eliminate the annoying clanging and banging associated with ordinary receptacles. They are equipped with special lock-lid covers eliminating odor and insect problems.

Additional data may be obtained from the manufacturer, or use the Post Card following Page 50. Circle No. 947.

**Waterworks Superintendent Wanted**

City of Augusta needs Waterworks Superintendent.

Duties: Charge of construction and all phases of Waterworks operation.

Qualifications: Graduate of an accredited engineering school preferred. 5 years experience as Waterworks Superintendent or Assistant. Salary commensurate with qualifications and experience.

Write:

Mr. Charles O. Phillips,
Director of Personnel,
City Hall
Augusta, Georgia

**CIVIL ENGINEER**

***Excellent Opportunity in Southern California in Private Business***

One of our engineers is retiring on pension after 20 years' service.

The man who will replace him should have a general design and construction experience in the development of

General Survey,
Earthmoving,
Sewerage,
Drainage,
Water Supply,
Street and miscellaneous small to medium concrete and steel construction projects.

Age 30 to 50, family man, Civil Engineering Degree and registered professionally in California. Good salary and employee benefits with permanent future.

Send experience resume to:

**P. O. BOX 1151**
**GLENDALE, CALIFORNIA**

**VILLAGE MANAGER Wanted**

Village of Morton Grove, Illinois is receiving applications for the position of Village Manager.

Address Applications to:

President and
Board of Trustees
Morton Grove, Ill.

## Elect Rentschler President of DEMA

**Walter A. Rentschler, vice-president of Baldwin-Lima-Hamilton Corp., is new president of the Diesel Engine Manufacturers Association.**

Walter A. Rentschler, vice-president and a director of the Baldwin-Lima-Hamilton Corp., Philadelphia, Pa., and general manager of its Hamilton Division, Hamilton, Ohio, has been elected president of the Diesel Engine Manufacturers Association, according to a recent announcement. Mr. Rentschler, an Association vice-president and director, succeeds Thomas E. Hughes as president. Mr. Hughes is general manager of the Cleveland Diesel Engine Division of the General Motors Corp.

Also elected at the recent annual meeting of the DEMA was a new vice-president, Guy J. Coffey, president of the Chicago Pneumatic Tool Co., New York City.

William E. Butts, president of General Metals Corp., San Francisco, Calif., was reelected a vice-president, and Robert H. Morse, Jr., president of Fairbanks, Morse & Co., Chicago, Ill., was re-named treasurer.

Robert L. Stanley, DEMA's educational director and a resident of Falls Church, Va., was elected executive secretary and executive director to succeed Harvey T. Hill, who retires the first of the year.

Five directors were reelected at the annual meeting. They are Mr. Coffey; Mr. Butts; Otto G. Fischer, president of The Union Diesel Engine Co., Oakland, Calif.; Robert E. Friend, president of the Nordberg Mfg. Co., Milwaukee, Wis.; and Lawrence F. Williams, president of The Cooper-Bessemer Corp., Mt. Vernon, Ohio.

The offices of the Association, it was announced, will be moved from Chicago to 2000 K St., NW., Washington, D. C.

CLT

*Tax Equalization Appraisals*

Fifteen years of unduplicated experience of producing highest quality appraisals for tax equalization purposes.

Client list and brochure upon request.

**COLE-LAYER-TRUMBLE COMPANY**

11 West Monument Ave. • Dayton 2, Ohio

PROVABLE APPRAISALS SINCE 1938

DISTRICT OFFICES:

172 Clinton Avenue, New Rochelle, New York
207 Investment Building, Pittsburgh, Pennsylvania
123 N. Poplar Street, Charlotte, North Carolina
415 Congress Street, Portland, Maine
84 Peachtree Street, N.W., Atlanta, Georgia

**CITY ENGINEER WANTED**

Unusual opportunity for graduate Civil Engineer or equivalent with professsional license in southern Pennsylvania city.

Experience essential in land surveying, street and sewer design and construction and related municipal work. Experience desirable in zoning and subdivision control. No structural design is involved. Would be in charge of Engineering Department, supervise survey crew and draftsmen, and would be expected to meet the public as required. Salary range $7,000 to $8,500 with usual benefits. Permanent non-political position.

Send resume of training and experience to: Borough of Chambersburg, 100 South Second Street, Chambersburg, Pa. Attention J. G. Cree

**CIVIL OR SANITARY SEWER ENGINEER**

*Wanted*

A graduate civil or sanitary sewer engineer, experienced in design and construction of water and sanitary sewer utilities. To serve as Chief Water and Sanitary Sewer Engineer of rapidly growing municipality.

Write outlining education, experience and starting salary to:

Public Works Commission
P. O. Box 231
Fayetteville, N. C.

# About People

Succeeding C. E. Jones as assistant sales manager of the Construction Equipment Division, **International Harvester Co.,** is Ralph G. Greer, former assistant district manager for the company. Mr. Jones has been named supervisor of national contractors' sales. . . Main offices of the company are located at 180 N. Michigan Ave., Chicago 1, Ill.

**R. G. Greer**

A new consultant on highways, William F. Childs, Jr., is announced by **Whitman, Requardt and Associates,** consulting engineers, Baltimore 2, Md. Mr. Childs was formerly employed as an advisory engineer to the State Roads Commission of Maryland.

Dr. George E. Symons, is the new executive vice-president and editorial director of the Scranton Publishing Co., Inc., of New York City and Chicago, publishers of *Water and Sewage Works, Industrial Wastes* and *Modern Highways.*

Three marketing promotions in the Communications and Electronics Division of **Motorola, Inc.,** 4501 W. Augusta Blvd., Chicago 51, Ill., are announced by Harold A. Jones, director of sales for the Division. Robert L. Borchardt is new manager of the company's Technical Information Center; Frederick W. Alexander has been named new advertising manager; and Robert E. Newlin is now product promotion supervisor.

R. B. Clevering, president of **The Harvill Corp.,** Los Angeles, Calif., announces the appointment of John A. Carrington as general sales manager. Mr. Carrington will direct an expanded national sales program for "Tork-Master" valve operators, temperature control equipment, and other Harvill products.

A new representative in the metropolitan New York area, Henry Schwartz, has been appointed by the **Bennett Mfg. Co.,** Alden, N. Y., manufacturers of waste receptacles. The company has also named a new sales agent, Jack Jackson, to the wholesale and jobbing trade in Texas, Oklahoma, Louisiana and Arkansas.

As new director of the sanitary technical division, **Dorr-Oliver, Inc.,** Stamford, Conn., Fred G. Nelson will have over-all responsibility for the development, design and engineering of all D-O equipment used in the sanitary field. Mr. Nelson replaces R. S. Rankin, who after 27 years with the company, will remain in a consulting capacity on sanitary engineering matters.

From **Kerrigan Iron Works, Inc.,** Nashville, Tenn., comes news of a new assistant manager, J. D. Auckland, for the company's Lighting Standard Division. Mr. Auckland was formerly sales manager in the Industrial Lighting Equipment Division of the Quadrangle Mfg. Co.

**J. D. Auckland**

Succeeding H. N. Mallon as president of **Dresser Industries, Inc.,** Dallas, Tex., is J. B. O'Connor, formerly executive vice-president of the firm. Mr. Mallon has been appointed chairman of the board of directors and will remain chief executive officer of Dresser Industries. The Dresser Mfg. Div., Bradford, Pa., has appointed three new sales representatives. They are Fred Frey, Pacific Northwest area; Jack Bradigan, sections of New York, Pennsylvania and Ohio; and Cornelius Zippro, Southeast area.

Robert E. Friend, president of **Nordberg Mfg. Co.,** Milwaukee 1, Wis., announces the appointment of a new electrical engineer, Albert T. Metcalf, to assist all Nordberg product engineering, manufacturing and sales departments. Mr. Metcalf was formerly electrical engineer for the Anglo-Lautaro Nitrate Corp., of Antofagasta, Chile.

**A. T. Metcalf**

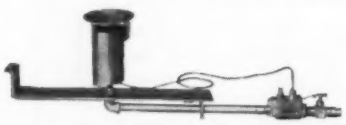
News from Alva W. Phelps, chairman of the board and president of **The Oliver Corp.,** 400 W. Madison St., Chicago 6, Ill., informs us of the election of Samuel W. White, Jr., and Donald W. Koegle as vice-presidents of the firm. Oliver Vice-President Edward H. Fisher has been appointed head of the newly created special products division.

When C. R. Dabney takes over as new district sales representative for the **Huber-Warco Co.,** Marion, Ohio, his territory will include the States of Texas, Oklahoma, Arkansas, Louisiana and New Mexico. Mr. Dabney will handle the sales and service of the company's motor graders, tandem rollers, 3-wheel rollers, and the Huber-Warco Maintainer.

G. G. Deakin, marketing manager of Caterpillar Tractor Co. Ltd., Desford, England, and D. G. Stranger, advertising manager of Caterpillar of Australia Pty. Ltd., are visiting Caterpillar's United States operations to familiarize themselves with the company's marketing methods. The men will spend most of their 3-month stay at the main plant


**LIQUEFIED PETROLEUM GAS SALAMANDERS**

This is the AEROIL Popular Priced L. P. G. Salamander. Choice of high pressure at 10 lbs. or low pressure at 6 ozs. Illustration below shows low pressure burner with full automatic cut-off valve. Safe, sure, clean and inexpensive.



**HIGH or LOW PRESSURE**

**CLEAN — NO SOOT — NO SPARKS — NO ASHES**

CONTRACTORS, send for Leaflet HE-S-A on L. P. G. Winter Heating Equipment. We are featuring the very latest and finest of Gas Salamanders with B. T. U. Ratings up to 120,000. All accessories are available . . . including SAFETY P. O. L. Connections and COMPLETE AUTOMATIC CUT OFF VALVES. All burn with clear blue flame . . . perfect combustion. Salamanders priced at large discounts for quantity. Now you can buy an AEROIL in the popular price range. L. P. G. Thawing Torches, Steam Thawers and other Winter Heating Equipment.

Aeroil PRODUCTS CO., Inc.
Wesley St.,
So. Hackensack, N. J.
4648 S. Western Av. Chicago 9.
3217 Union Pacific Av. Los Angeles 23.

of the **Caterpillar Tractor Co.** in Peoria, Ill.

A new president, Clarence E. Elsas, is announced for the **Fulton Bag & Cotton Mills,** New Orleans, La. Mr. Elsas succeeds R. O. Arnold, who retired recently to devote full time to private interests.

B. A. Tucker, sales manager of the **Peerless Pump Division, Food Machinery and Chemical Corp.,** Los Angeles, Calif., announces the appointment of two new sales engineers, Max H. Richter and George Ries. Mr. Richter will handle Peerless pump sales in Louisiana and Arkansas, and Mr. Ries will operate in the State of Ohio.

New general manager of the Page Steel and Wire Division, **American Chain & Cable Co., Inc.,** Monessen, Pa., is Harvey W. Seymour, formerly plant manager of the Monessen works. Mr. Seymour has been associated with the Page Division for the past 30 years.

H. W. Seymour

## Executive Changes Announced by Dresser

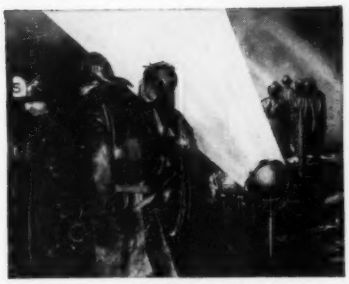
Reorganization of the top management staff of Dresser Industries, Inc., Dallas, Texas, is announced by J. B. O'Connor, president.

Hector P. Boncher succeeds Doyle Miller as operating vice-president of the firm. Mr. Miller resigned recently to enter the offshore drilling contract field. As new operating vice-president, Mr. Boncher will be in charge of Dresser's heavy machinery divisions, supervising the operations of Clark Bros., Dresser Mfg. Div., Roots-Connersville Blower Division, Pacific Pumps, Inc., and the Dresser-Ideco Co.

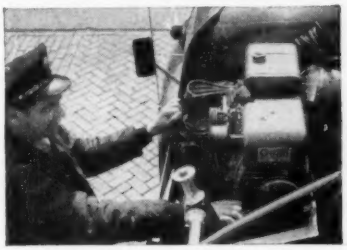
Henry Herzig, formerly director of manufacturing, has been appointed operating vice-president in charge of Lane-Wells Co., Well Surveys, Inc., and Ideco. He will also supervise the operations of Security Rock Bits, Ltd., in England.

Otto Hammer, formerly president of Security Engineering, has been appointed operating vice-president of Dresser Industries, Inc. Mr. Hammer will be in charge of operations for the Guiberson Corp., recently acquired by Dresser, and the Security Engineering Co.

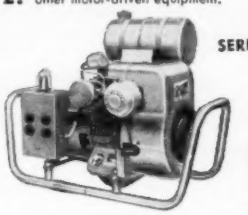
Robert H. McLemore, formerly director of oilwell services for Dresser, has been appointed vice-president and general manager of the new Turbodrill Division of Dresser Industries, Inc.

1. Carry them by hand right up to the fire...operate power tools and lights.



2. Mount them on rigs to power searchlights and other motor-driven equipment.



SERIES 105AK
1,500 watts;
125 pounds

# ONAN Electric Plants help you fight fires all 3 ways!

ONAN portable models combine light weight with 4-cycle quick starting, long life and all-around dependability. Quick release bases are available on many models permitting instant removal of the units from fire rigs. Onan Standby Plants from 1,000 to 50,000 watts assure electric power for fire stations, headquarters departments and radio communications. Air-cooled models can be equipped with Onan's exclusive Vacu-Flo cooling system allowing installation in closed rooms or compartments.

3. EMERGENCY STANDBY POWER
Installed in the fire station or department, they supply all electricity required when power is interrupted.

*Write for Folder on fire department models*

**D. W. ONAN & SONS INC.**
2568 Univ. Ave. S. E., Minneapolis 14, Minn.

## EXECUTIVE INDUSTRIAL DEVELOPMENT DIRECTOR Wanted

Executive director for a city industrial development foundation now being organized. Two-thousand acres of land. Willing to pay salary commensurate applicant's ability to produce.

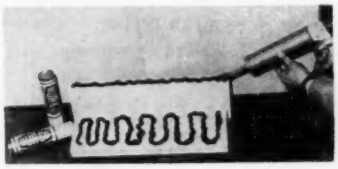
Should have experience soliciting new industry and in the management of such a district.

Write with a complete summary of qualifications and salary expected.

Box 412
THE AMERICAN CITY
470 Fourth Avenue
New York 16, N. Y.

## BIRD DAMAGE CAN BE STOPPED

Bur-Co Bird Repellent will pay for itself many times in labor saving and the elimination of building repairs. It does not harm birds—they instinctively dislike Bur-Co. There is no chemical reaction to any building material. It will not harm humans. Each application applied properly, as described below, will eliminate birds for one year or longer.



One ribbon of Bur-Co about ½ inch thick as shown at the top of this illustration is sufficient for a narrow ledge. Slightly larger ledges can be treated with two such ribbons 4 inches apart. The zigzag treatment, also shown above, for wider areas. Write today.

**BURR CHEMICAL CO.**
3329 AUBURN Dept. II ROCKFORD, ILL.

# Minneapolis throws light on how municipalities purchase equipment

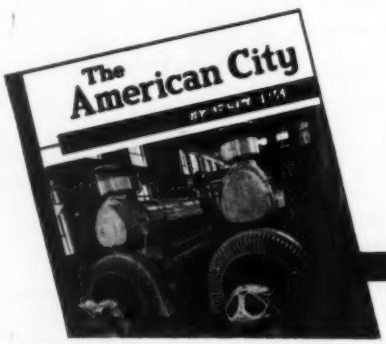
**When city governments buy equipment, the purchasing process usually involves the recommendations of the engineers in charge of the project and the approval of administrative and policy-making officials, such as the mayor and city council. The Minneapolis story is no exception.**

Ralph Sprungman

Recently Lake Street received the "new look". Street widening and resurfacing, new sidewalks, and installation of General Electric fluorescent luminaries and Union Metal lighting poles involved the spending of one and a quarter million dollars. The officials planning and supervising the work were Traffic Engineer Ralph Sprungman, his assistant, Thomas Thompson, and City Engineer Hugo Erickson.

When asked how the purchasing procedure works, Mr. Sprungman replied, "Our municipal operation demands that we write specifications on needed equipment. All three of us have a say in drawing the specifications, and we each pick up ideas on equipment from THE AMERICAN CITY, which is routed regularly from the City Engineer's office. In the end the low bid which complies with specifications is the one which we recommend to our City Council for its official action."

General Electric and Union Metal advertise regularly in THE AMERICAN CITY in order to tell both the engineering and the administrative officials about the values of their products. These officials will also see *your* message if you invest your advertising dollars in THE AMERICAN CITY.




**The American City**

470 Fourth Avenue, New York 16, N.Y.

# The American City
# Professional Service Directory

**STANLEY ABEL**
*Public Administration Consultant*
376 West Sixth Street
Perris California

**ALBRIGHT & FRIEL, INC.**
*Consulting Engineers*
Water, Sewage and Industrial Waste Problems, Airfields, Refuse Incinerators & Power Plants, Industrial Building, City Planning, Laboratory, Reports, Valuations.
3 Penn Center Plaza, Philadelphia 2

**ALLEN & HOSHALL**
*Consulting Engineers*
Mechanical—Civil—Electrical
Municipal Improvements
65 McCall Place
MEMPHIS, TENNESSEE

**ALVORD BURDICK & HOWSON**
*ENGINEERS*
Water Works — Sewage Disposal
Water Purification — Drainage
Flood Relief — Appraisals
Sewerage — Power Generation
20 North Wacker Drive, Chicago 6, Ill.

**MYRON C. ANDERSON**
*Consulting Engineer*
*Consultant*
Swimming Pools
Recreation and Park Areas
Design — Renovation
Maintenance — Site Planning
Surveys — Equipment Selection
5403 Kirby Drive Houston 5, Texas

**E. T. ARCHER & CO.**
*Consulting Engineers*
Organized 1907
Reports — Designs — Supervision
Water Works — Sewerage Treatment
Power Systems
Railway Exchange Bldg.
Kansas City 6, Mo.

**JOHN J. BAFFA**
*Consulting Engineer*
Drainage — Swimming Pools
Sewerage — Water Supply & Treatment
Sewage Treatment — Industrial Wastes
Refuse Disposal — Rate Studies
75 West St. New York 6, N. Y.

**SCOTT BAGBY and ROBERT CATLIN**
Modern Comprehensive City and Area Planning and Development
"Plans Which Can Be Carried Out"
11 Bloomfield Ave., Denville, N. J.
1500 Margaret S.E., Grand Rapids, Mich.

**Abrams Aerial Survey Corporation**
*Over one-third century of Experience*
606 E. SHIAWASSEE STREET
Complete facilities for all aerial photography, processing, photogrammetric drafting and reproduction.
Planimetric, topographic maps and profiles. Large scale atlas sheets. Infra-red for forestry analysis.
LANSING 1, MICHIGAN

**EXPERIENCE COUNTS: Dependable Photo Maps, Topographic Maps, Tax Maps**
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Sapulpa provides modern refuse collection with GarWood units.

# IS THE CITY MANAGER SEEING YOUR SALES MESSAGE?

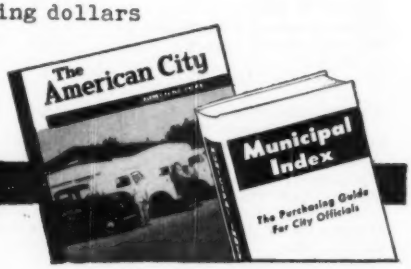
You can make more sales to city and town governments by reaching city managers, as the Sapulpa, Oklahoma story shows.

City Manager
J. Orville Bumpus

Sapulpa is a town of 13,031 people. City Manager J. Orville Bumpus was recently faced with a trash and garbage collection problem. He decided to expand municipal services by purchasing modern refuse trucks.

City Manager Bumpus first studied the garbage truck ads in the MUNICIPAL INDEX and THE AMERICAN CITY. He writes, "Then I turned to the 'postcard information service' of your publications to get in touch with the manufacturers." Demonstrations soon followed. GarWood Industries, Inc., an advertiser in THE AMERICAN CITY and the MUNICIPAL INDEX for many years, made the sale.

City managers are key men on municipal sales. There are over 1,100 municipalities with city managers as overall business administrators. These executives will see your sales message if you invest your advertising dollars in THE AMERICAN CITY and the MUNICIPAL INDEX.

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# LOC*

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***Low Overall Cost**

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**M. H. RHODES, INC.**
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Manufactured and sold in Canada by SPERRY GYROSCOPE OTTAWA, LIMITED, 3 Hamilton St., Ottawa, Ontario, Canada

*Area too cramped, material too wet for power shovels . . . so*

# Alley Construction Company loads mud-imbedded boulders with 2¼-yd Michigan

On this section of Minnesota State Highway 76 near Witoka, Alley Construction Company's relocation contract called for cutting the new right-of-way through a hill of huge, clay-imbedded limestone boulders. Despite unusually tough conditions — including limited work space and deep mud — Alley successfully used their 2¼ yard Michigan Tractor Shovel for the work. Some of the chunks handled weighed over 7 tons each, and measured 3 to 6 feet in diameter.

### On job all summer

Normally the job would have called for a 1½ or 2 yard power shovel, says Owner Merle Alley, but at the time work was started, the cut was too narrow and the material too wet and sticky for *any* crawler-excavator. So the company tried their Michigan Tractor Shovel instead, even though they considered this an unusually tough and "practically impossible" assignment for any rubber-tired machine. *The Michigan, however, worked "perfectly".* So perfectly, in fact, that Alley kept it on the rock sections of their 7½-mile, $747,000, million-yard contract *all summer.* "It loaded more material, and worked more efficiently than any shovel or loader we had on the job," said Mr. Alley. No mechanical troubles were noted, in spite of the extremely heavy lifting and soft footing.

### Drives job-to-job at 24 mph

"We liked its speed, too," Mr. Alley says. "At 24 mph it got where it was needed in a hurry — and we never needed a trailer to move it. We did the toughest assignments with it — work no other make of tractor shovel could even touch."

### Try one on your work

Like Mr. Alley, more and more owners have found a Michigan will handle jobs which have always been considered too tough for rubber-tire tractor shovels. The exclusive Clark powertrain — 3-to-1 torque converter, no-clutch power-shift transmission, and planetary-wheel drive axles — gives the Michigan more usable power and traction than you've ever seen on this type of machine. Your Michigan distributor would like the chance to prove it. Ask him to demonstrate on one of your tough jobs — you name it.

Prompt, expert service from local Michigan distributor, Mork-Witthauer Co., Minneapolis, keeps Alley's work-efficiency high.

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**Construction Machinery Division**
**2495 Pipestone Road**
**Benton Harbor 43, Michigan**

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